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THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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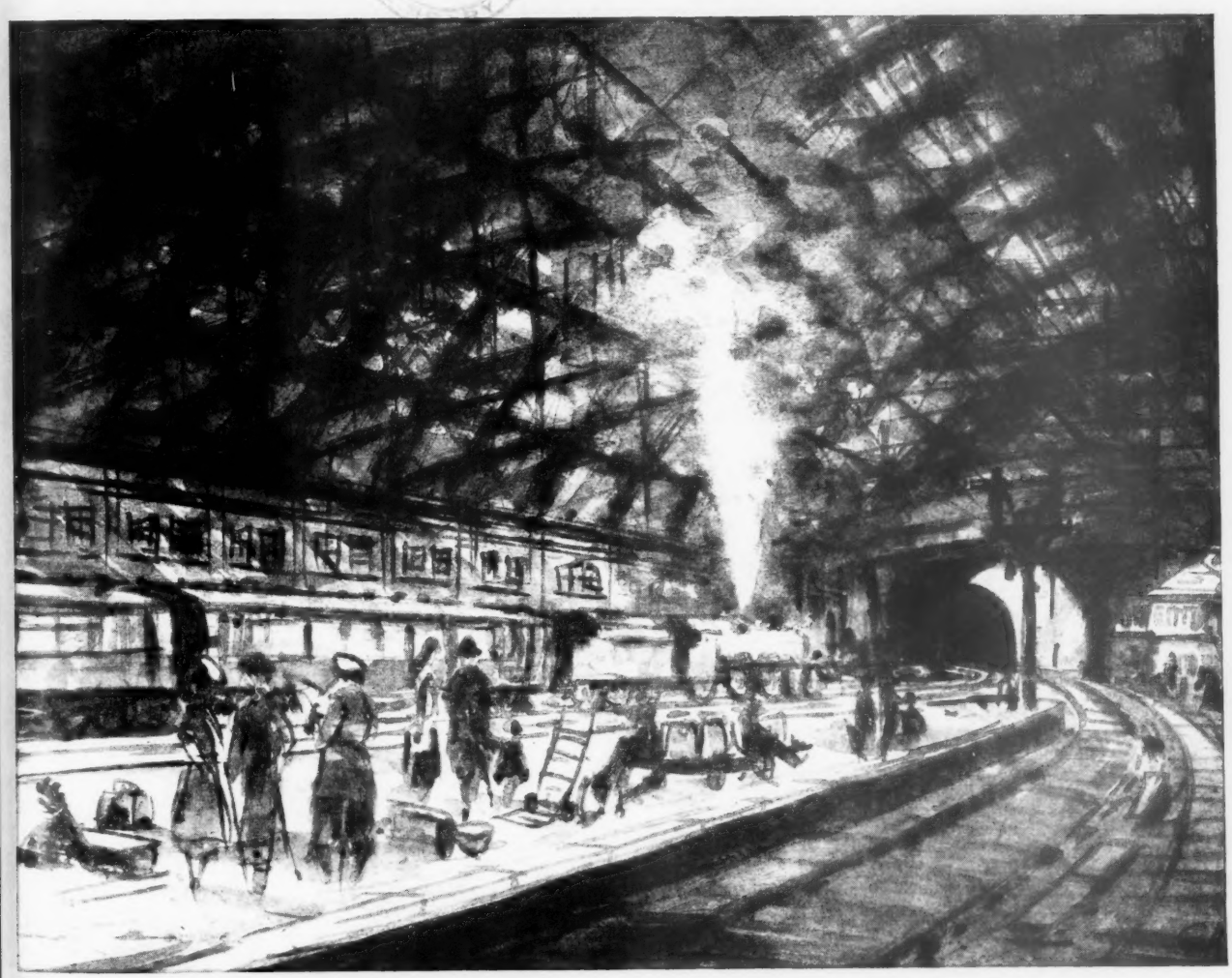

New Street Station, Birmingham. From a drawing by E. B. Musman [F]

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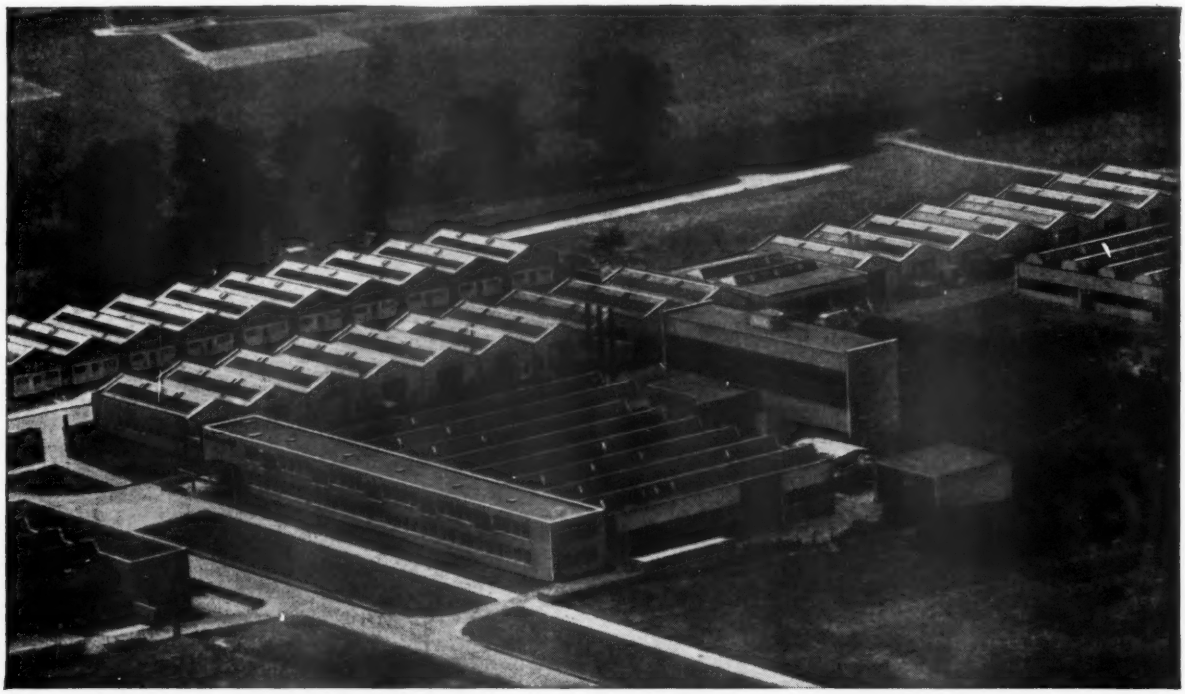

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THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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Honours and Awards

Legion of Honour. Professor Sir Patrick Abercrombie [*F*] has been made an Officer of the Legion of Honour.
Imperial Service Order. Mr. W. W. Hopkins [*A*] has been made a Companion of the Imperial Service Order.
Royal Academy. Mr. Brian O'Rorke [*F*] has been elected a Royal Academician.
Royal Scottish Academy. Mr. W. H. Kininmonth [*F*] has been elected a Royal Scottish Academician.

Delays in Planning Approvals

Following the Conference at Harrogate last year the question of delays in planning approvals has been discussed by the Town and Country Planning and Housing Committee. While special cases of delay may be cited it is considered that in the majority of cases delays can be prevented by informal consultation with Planning Officers at an early stage. At present this is not an invariable practice. Whenever there is any doubt, early application should be made for *approval in principle* before proceeding with detailed design. Such applications should be accompanied by an adequate description of the designer's intentions in order to prevent future misunderstandings from which delays could arise.

Scottish Building Contracts

The Royal Incorporation of Architects in Scotland and The Scottish National Building Trades Federation (Employers) have set up a Scottish Building Contracts Advisory Board with the object of providing an authoritative body in Scotland to which reference may be made for guidance in the interpretation of the Regulations and General Conditions of Contract for Building Works in Scotland dated 1 September 1954.

The Chairman of the Board, which had its first meeting on 31 January, is Mr. Lockhart W. Hutson, O.B.E. [*F*], (Hamilton), a Past President of the R.I.A.S. The Board is composed of an equal number of architects and building contractors, with two quantity surveyors sitting as assessors. The Secretary to the Board is Mr. Kenneth Macrae, W.S., 15 Rutland Square, Edinburgh.

Chairman, Allied Societies' Conference

The Allied Societies' Conference have appointed Mr. Harold Conolly [*F*] as Chairman for the Session 1956–57. Mr. Conolly will of course therefore become a Vice-President R.I.B.A.

The High Commissioner for Australia and the President at the opening of the Australian Architecture Exhibition

Shape and Sizes of Trade and Other Publications

The Council have been considering possible means of achieving standardisation of the sizes and shape of trade and other technical publications (see the article by Mr. Gontran Goulden on page 192 of this issue) and have decided to suggest to members that when acknowledging the receipt of non-standard size literature a note should be added in the following form:—

'I should like to draw your attention to the fact that the value of your trade literature is diminished when the size and shape of paper does not conform to British Standard 1311 (11 in. × 8½ in. or 8½ in. × 5½ in.). This means that it is inconvenient to file and difficult to use. Your firm may care to consider the adoption of this standard which would greatly improve the efficiency of my filing of technical information.'

Postcards bearing a statement on these lines are being prepared by the R.I.B.A. and will be available to members on request.

It is also suggested that architectural firms might consider the display of a notice on the above lines in their offices.

R.I.B.A. Architecture Bronze Medal: Liverpool Architectural Society

The jury entrusted with the award of the R.I.B.A. Architecture Bronze Medal in the area of the Liverpool Architectural Society for the three-year period ending 31 December 1953 have made their award in favour of the Denbighshire Technical College at Wrexham, designed by Messrs. Saxon, Smith & Partners (F. Charles Saxon [*F*] and R. Vernon Smith [*A*]).

Mr. Noel Musgrave who becomes Editor of the R.I.B.A. JOURNAL in June

New Building Centre Information Service and the R.I.B.A. Journal

The Royal Institute of British Architects and the Building Centre announce that Mr. Eric L. Bird is being released from his position as Editor of the R.I.B.A. JOURNAL in order to become Technical Education Officer at the Building Centre. This new position has been created as the result of a memorandum submitted recently by the R.I.B.A. to the Building Centre suggesting the creation of a new information service to architects and the building industry on modern building techniques; this service is especially intended to be of use to architects, surveyors and builders outside the London area. The Building Centre have agreed to establish and operate it.

The R.I.B.A. have appointed as Editor of the R.I.B.A. JOURNAL Mr. Noel Musgrave who has relinquished his position as Editor of THE ARCHITECT AND BUILDING NEWS.

Mr. Musgrave will join the R.I.B.A. staff on 9 April but Mr. Bird will continue to act as Editor of the JOURNAL until the end of the Conference at the beginning of June.

The Journal

The R.I.B.A. has been 'hoist with its own petard'. Some little time back the Council on the recommendation of the Science Committee made representations to the Building Centre regarding the need for greater technical information for architects who were not able easily to make use of the headquarters in Store Street. The Building Centre accepted our advice and agreed to formulate proposals to provide this service. The result of it all is that they have invited Eric Bird to operate it. So what we have gained on the swings we have lost on the roundabouts.

The Council have reluctantly agreed to accept the Editor's resignation. Eric Bird joined the R.I.B.A. staff from THE ARCHITECT AND BUILDING NEWS in 1933 as the first Secretary to the newly formed Public Relations Committee and Technical Editor of the JOURNAL.

We lost his services for the period of the war when he joined the late Dr. Stradling in the Research and Experiments Department of the Ministry of Home Security to which he was Architectural Adviser, becoming an expert on incendiary bombing and fire protection.

Before that and when the dark clouds of war were gathering, Mr. Bird with Mr. T. E. Scott represented the R.I.B.A. on the Home Office Structural Air Raid Precautions Committee and together they toured the country, lecturing at meetings of the Allied Societies on measures of structural protection and shelter design in civil defence.

When the war ended Mr. Bird returned and took up the post of Editor. Under the chairmanship of Sir Percy Thomas, who was President at the time, a small committee of the Council in consultation with Mr. Bird decided on certain changes in the format of the JOURNAL to make it more attractive and readable, including that of the coloured cover. He redesigned the format to accommodate the steadily increasing amount of material to be published and to meet the rises in the cost of printing and paper. He aimed at making the JOURNAL of service to members in their work while maintaining its standing as the periodical of a learned society.

It will be universally agreed that Mr. Bird achieved a marked success in attaining these objects and the reputation of the JOURNAL never stood higher than it does today.

Our regret at his resignation is tempered by the knowledge that his services will still be available to the profession in another capacity and that we have been fortunate to obtain as his successor Mr. Noel Musgrave, the present Editor of THE ARCHITECT AND BUILDING NEWS.

C. D. S.

'The Architect and Building News'

Mr. George Mansell is succeeding Mr. Noel Musgrave as Editor of THE ARCHITECT AND BUILDING NEWS. Mr. Mansell is an architect who has been Assistant Editor to Mr. Musgrave since 1947. During the war he served in the Royal Air Force as a pilot in Fighter Command. Before the war he was an assistant in the office of Norman and Dawbarn [*FF*], being the first assistant appointed when that partnership was formed.

Hemel Hempstead New Town Exhibition

An exhibition of official and private building at Hemel Hempstead New Town is to be held at the R.I.B.A. from 22 to 30 May.

British Architects' Conference, Norwich. Travel Facilities

British Railways have this year undertaken to reserve without charge accommodation for Conference members on certain trains. Full details will be found on p. 214.

Exhibition of Pictures by Mr. E. B. Musman

Although most architects 'do a little sketching' not many achieve a professional standard, possibly because unlike the landscape artist they do not devote a lifetime to it. So far as possible we try to collect cover pictures for the JOURNAL from the best architect-draughtsmen, but find that their modesty seems to increase in proportion with their ability. But from time to time we succeed in prising loose a picture or two from some of them. One such is Mr. E. B. Musman [*F*] whose office we visit occasionally in search of cover material. An example is reproduced on the cover of this JOURNAL.

He has now been persuaded by friends to hold an exhibition. The President R.I.B.A., Mr. C. H. Aslin, C.B.E., is to open it at Parsons' Grosvenor Galleries, 70 Grosvenor Street, on 5 April. The gallery is let free of charge on condition that 25 per cent of all proceeds from sales of pictures goes to a charity and for his exhibition Mr. Musman has nominated the Architects' Benevolent Society. The exhibition will be open for three weeks.

R.I.B.A. Diary

THURSDAY 29 MARCH, 12.30 p.m.—Tuesday 3 April inclusive. R.I.B.A. offices and library closed for Easter holiday.

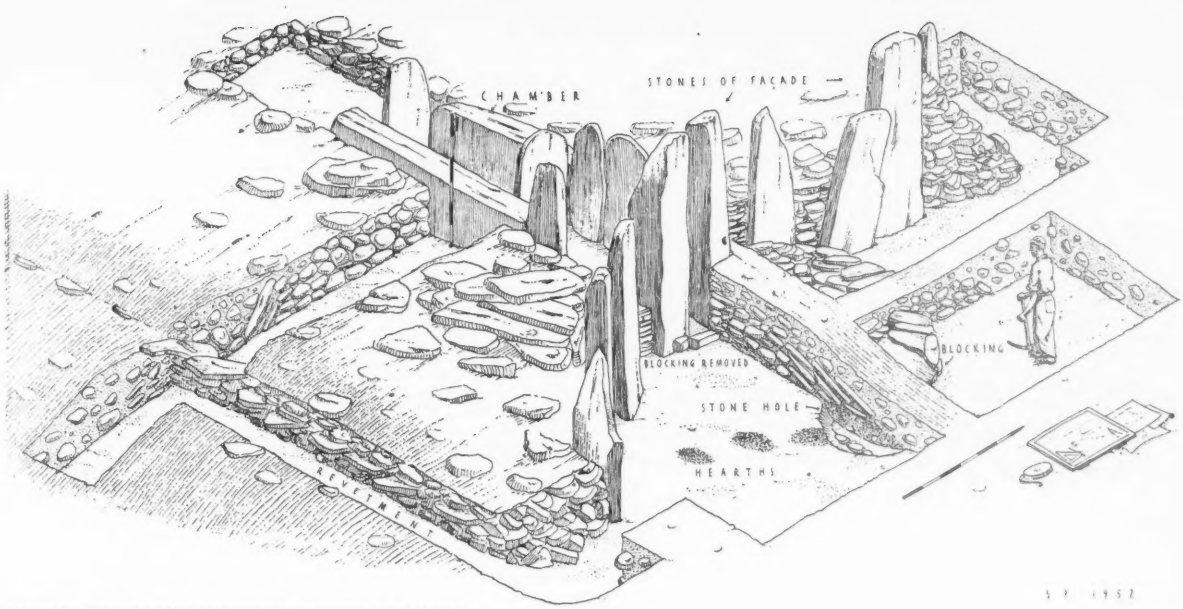
FRIDAY 6 APRIL. 7 for 7.30 p.m. Guildhall. R.I.B.A. Dinner.

MONDAY 9 APRIL. 6 p.m. Library Group. Evening on the records of the Metropolitan Buildings Office introduced by Miss Ida Darlington, M.A., F.L.A.

TUESDAY 10 APRIL. 6 p.m. General Meeting. Presentation of the Royal Gold Medal 1956 to Dr. Walter Gropius.

THURSDAY 12 APRIL. 2.30 p.m. Symposium on Design of Office Buildings. (Admission by ticket only.)

TUESDAY 17 APRIL. 6 p.m. Special General Meeting. Followed by General Meeting. *Colour in Buildings*—D. L. Medd, A.A. Dipl. [*A*] and H. L. Gloag, A.A. Dipl. [*A*].



Chambered tomb with elaborated forecourt and façade

Architecture and Ritual in Megalithic Monuments

By Stuart Piggott, F.B.A., F.S.A.

Read at the R.I.B.A. 6 March 1956

IN 1709 SIR JOHN VANBRUGH addressed a plea for the preservation of Woodstock Manor to the Duchess of Marlborough. He began with a reference to 'the Vallue ... set upon the Remains of Distant Times', and continued 'nor amongst the Severall kinds of . . . Antiquitys are there any so much regarded, as those of Buildings; Some for their Magnificence, or Curious Workmanship; And others; as they move more lively and pleasing Reflections . . . on the Remarkable things which have been transacted in them, Or the extraordinary Occasions of Erecting them'. In Western Europe, the earliest monumental architectural remains of distant times are the stone-built chambered tombs usually known, with inaccurate convenience, as megalithic monuments, dating from the centuries around 2000 B.C. and having a widespread distribution from the Mediterranean to Shetland and Scandinavia. These monuments have claimed the attention of posterity by their durability, their relative abundance, and their notable, if sometimes primitive, architectural qualities, and have been the subject of much archaeological research. But I find myself wondering how often we archaeologists have regarded these earliest essays in European religious architecture as buildings at all. Do we in fact, as we construct our elaborate typological arrangements of their groundplans, pause to consider the remarkable things transacted in them, or the extraordinary occasions which led to their erection in the early second millennium B.C.?

I welcome the opportunity now before me of discussing some of the problems involved in a study of these monuments before an audience architectural rather than archaeological in outlook. For the problems are those common in some measure to all buildings such as tombs and temples, shrines and sanctuaries, which have been conceived and designed to satisfy spiritual rather than immediately material needs, and in response to specific requirements of ritual and ceremony. If one studies the religious architecture of Christendom or of Islam (to take convenient examples), a knowledge of the relevant ceremonies and concepts of belief illuminates and explains much of the formal planning and structure of the churches or mosques under review, and one could not think of the purely architectural study proceeding without constant consideration of the ritual purposes for which the buildings were in fact erected. Similarly, in the classical world of Greece and Rome, or in the ancient city civilisations of the Orient, temple and ritual must be constantly studied side by side, the one assisting the understanding of the other.

But in all these instances we are dealing with history, and with historically documented religions. In our study of the megalithic chambered tombs and temples of prehistoric Western Europe we are by definition outside the realm of historical records, and plunge deep into the anonymous past of non-literate societies. Our knowledge of the very existence of such societies is based upon archaeological evidence, itself dependent upon such remnants of the material culture of prehistoric communities as may by an accident of survival be preserved from the natural processes of destruction by time and decay. Material culture, you will notice: the body without the spirit, ritual monuments without a known ritual.

You will realise, and I need not enlarge on the point here, that while much information on the structure, economics and technology of prehistoric societies can be obtained by valid inferences from the archaeological evidence, this same evidence (which alone is at our disposal) can far less securely give us grounds for inferring much that is significant about the religious and ritual aspects of the life of the same peoples. While fully conscious of this fact, I do not think we should altogether despair, and in this paper I want to make certain points which I feel to be valid inferences from the early essays in European religious architecture we are now considering.

Accepting, then, the fact that we can know nothing directly, and little enough indirectly, of the religious or magic beliefs in the minds of the men who built the megalithic tombs, we may yet try an approach which will at least treat the buildings involved in terms of function. Much of the archaeological studies on these tombs has been preoccupied with the typology of their

ground-plans, often it seems conceived as purely formal arrangements in which modifications took place along mechanistic lines of evolution or degeneration. Such an approach ignores the fact that all architecture, however primitive, is essentially related to function, and is a durable three-dimensional setting for some human activity. A dwelling presupposes the family unit and its day-to-day life; a tomb or temple cannot be built before the appropriate ritual it is to enshrine is itself in being. I would therefore suggest that we approach the megalithic chambered tombs of Western Europe with a recognition of two factors: the first, that we are dealing with a form of primitive architecture directed by human motives differing in degree rather than in kind from those known in historically documented communities, and secondly, that this architecture was designed, consciously or semi-consciously, as the monumental setting for certain ritual performances, which themselves must have controlled the formal planning and spatial relationships of the component elements in the composition.

It seems to me not unreasonable to use in this inquiry some of the concepts which have proved applicable to the study of religious monuments of later and indeed recent times. I have found it most illuminating, for instance, to pursue the theme of the liturgical control over architectural form demonstrated in post-Reformation England by Addleshaw and Etchells; their wise caution against overestimating 'the place of mental apprehension' in the conscious appreciation of the reason for changes in church architecture which nevertheless took place in the seventeenth and eighteenth centuries is surely even more applicable in our studies in the second millennium B.C. In fact, I believe our problem has points in common with, and can be illuminated by, the architectural history of early and mediaeval Christianity in Europe.

Basically, we are concerned with the phenomenon of a set of formalised architectural modes spreading widely, and probably relatively swiftly, over a large area, and representing the expression of a common faith reflected in monumental structures combining elements of tomb and temple. In Christendom there survives the architecture, together with the dogmas and liturgies which helped to shape it; temples which also had a sepulchral function, with ceremonies commemorating death and resurrection at an altar which was also a tomb at least in ritual function, surrounded by the secondary burials of the faithful. In early second millennium Europe we can infer, from the architectural remains, some primitive version of a widespread religion which demanded, for the proper performance of rituals connected with death and burial, certain distinctive architectural settings which recur in various combinations but in consistently recognisable forms through a great crescent of lands united by the Western Seaways, its horns touching the Western Mediterranean in the south and the Shetland Islands in the north. Throughout this arc of nearly three thousand miles we can not only perceive a set of consistent formulae controlling the basic forms of the structures, but we can also recognise certain parallel sequences of architectural development which must reflect underlying changes in thought and ritual, however dimly formulated or unconsciously evolved these may have been in the minds of those responsible for devising tomb or temple architecture among these prehistoric communities.

The immediate ritual problem to which these structures are variant architectural solutions is to provide a permanent, and not infrequently a monumental and impressive, burial-place for collective interments of members of a relatively small social unit, successively and over a period of generations. In a word, they are family vaults, in many instances at least in the strict sense of containing individuals whose blood relationships were sufficiently close for familial resemblances to be expressed in recognisable form in their skulls. Such collective or communal burials are known from at least the third millennium B.C. in the Eastern Mediterranean, and are contained normally in rock-cut chambers which may well simulate an original natural cave used for a similar purpose. In the Western European region under review we find, from Sicily to the mouth of the Tagus and again in the Marne valley of Northern France, variations on this theme of the rock-cut tomb; but a more characteristic development is the tomb built above ground (or at most set into it to some degree), and using the large stone slabs which render such structures megalithic in the literal sense.

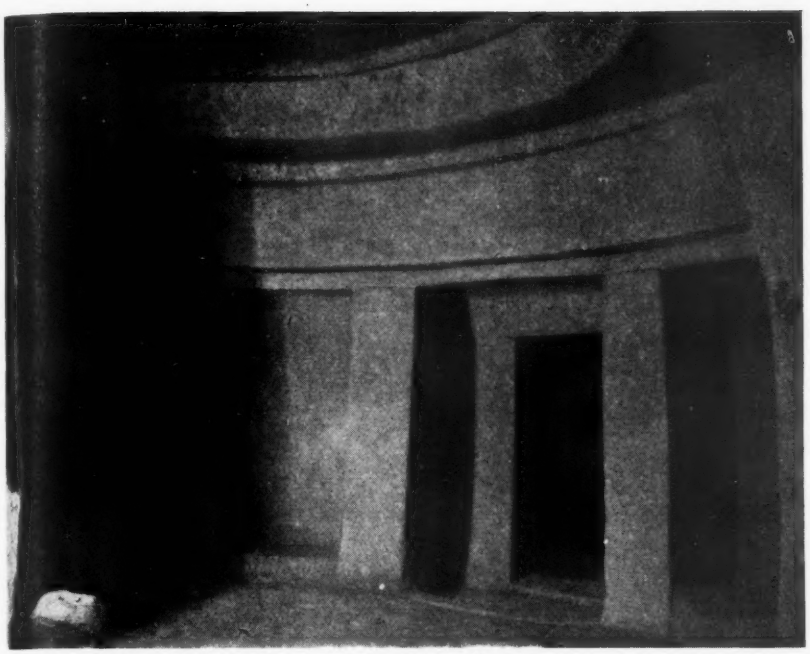
The technological resources available to the builders of these monuments were relatively simple and restricted. Some knowledge of copper and bronze working was common among most of the Mediterranean and Iberian communities concerned, though hardly attested along the coasts of Atlantic Europe, in the British Isles or in Scandinavia. At all events, the metal tools available would have been of little or no use in stone-working, and we must visualise the monuments as by and large the products of peoples in a Stone Age economy. The faces and surfaces of stones employed in the tombs are in fact rarely more than roughly knocked into shape, and are normally those provided by the natural cleavage-planes of the material. Mortar was not known (excepting occasionally a rough soft mud-mortar), but the problem of roofing vaults or passages was answered by a knowledge not only of simple trabeate lintels and cover-slabs, but by the use of the corbelled or false vault. In the construction process, while the use of the lever and the inclined ramp were obviously known, there was of course no knowledge of the mechanical properties of the block and tackle. Surviving examples attest the use of vegetable fibres for rope-making, though for heavy work the use of rawhide is to be expected, especially as we are dealing with peoples whose economies were those of the pastoralist and agriculturalist. Man-power alone would provide adequate traction, and

Map showing distribution of chambered tombs in western Europe

the use of sledges and rollers can be reasonably assumed.

The rituals attendant on the funeral ceremonies would seem to have demanded certain common necessities for which the builder would have to make provision. The first and most obvious was the tomb-chamber itself, which had to be a permanent and sufficiently commodious vault to house the remains of the dead not only adequately but on occasion with ostentation and magnificence. To this chamber, intermittent access would be required, to allow of the deposition of successive members of the group entitled to be buried in that tomb, as and when they died. It was necessary therefore for the chamber to have an entrance, and normally a roofed passage approach of some kind; since between funerals the burials needed protection from violators and robbers of the tomb, provision had also to be made for closing or blocking this entrance passage. The entrance to the chamber from the passage (or direct from the outer world) would be demarcated and emphasised, often deliberately narrowed to the minimum, as if to make the contact between the dead and the living worlds as difficult as possible; ghosts can be all too active members of the living community.

The entrance to the whole tomb, whether almost directly leading to the burial chamber, or by the intervention of a passage, again needed emphasis, and is, as we shall see, frequently made the focus of architectural constructions which delimit a forecourt area by means of a recessed façade. Among certain communities building this type of tomb this feature is taken over and exaggerated to a remarkable degree. Indeed, as we shall see, the differing types of tomb in the various areas of their construction are in fact the products of local traditions of architecture which laid emphasis on this or that ritual adjunct of the tomb at the expense of others, and it seems reasonable to suppose that, since the structure is the architectural framework for particular actions, these local exaggerations of forecourts, for instance, must result from a corresponding and indeed antecedent elaboration of ritual performances at that particular part of the tomb.



Hal Saflieni, Malta (rock-cut): internal representation of façade

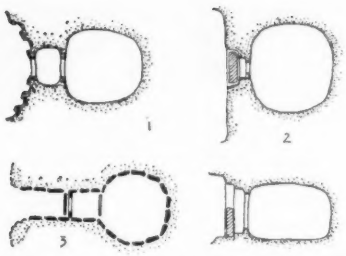
What we shall see, in fact, is that on the simple basic theme of burial chamber, passage and entrance or forecourt, a curious series of exaggerations and specialisations of function were devised in a large number of diverse places in Western Europe, with accompanying architectural modifications. A persistent tendency, for instance, is that of the multiplication of separate burial compartments within the same tomb, a problem solved in half a dozen different ways in as many regions. The demands for the enlargement of the space for ritual performances may at times go beyond the architectural capabilities of the builders, with the resultant creation of a new type of monument, as in Malta and probably elsewhere; in such architectural changes we presumably see reflected changes of ritual emphasis, and the shifting of the liturgical centre (to adopt a useful concept from church architecture).

Direct archaeological evidence of ritual is, as might be expected, scanty and often ambiguous. It is reasonably clear, however, that the dead body, when once reduced to a dry skeleton, was no longer treated with any great reverence, and the bones of previous occupants of the tomb-chamber could be, and usually were, unceremoniously bundled to one side or into the corners to clear floor-space for the latest burial: this belief that the essence of life is contained in the moist and liquid parts of the human body, and has departed from the dry bones, came down into Homeric and later Greek thought. So too the broken pots and the scorching of fires at the entrance or in the forecourt area must be connected with ritual there which may well have included the breaking of vessels after pouring libations. And in the stylised designs carved or less often painted on the tomb walls we can trace the recurrent figure of a female deity who must in some sense be a goddess of the Underworld, the Earth Mother who is at once the symbol of death and of fertility.

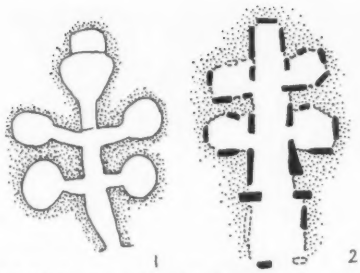
Before considering the architectural features of these tombs in greater detail, we must touch on their distribution. Their occurrence in the islands of the Mediterranean, along the coasts of southern France and Spain, and then again up the Lusitanian coast to the Bay of Biscay, thence to Ireland and the western and northern regions of Britain, and eventually to Scandinavia, points to the transmission of the ritual concepts and architectural traditions involved by peoples with a seafaring tradition. There are, of course, inland areas of similar tombs, especially in France, but these are equally clearly the result of subsequent expansion from regions of primary coastal colonisation. In considering this pattern of distribution it is important to realise what in fact must have been involved in the establishment of centres of tomb-building with a common architectural tradition in such widely separated areas. As we have seen, the repetition of specific architectural solutions to ritual requirements implies the primary existence of certain prescribed rituals forming part of a set of funeral ceremonies, themselves embodied in some form of religion with a fairly well organised structure. But the transmission and acceptance of such a faith *in vacuo* cannot account for the precise correspondences in planning and building techniques which we do in fact find among widely disparate communities. It must be remembered that much of the effective ritual structure of the chambered tombs under discussion is hidden underground or beneath the covering cairn of stones within which the burial vaults and their approaches are contrived, and can only have been known to those sanctioned by religious or magic authority to build the tomb and to carry out the funeral ceremonies within it. In other words, we must allow for the movement of individuals cognisant with not only the ritual prescriptions and formal planning of these tombs, but with the building techniques involved. Of these techniques, as we shall see, the most important (and most difficult) was the knowledge of the construction of false domes by means of concentric oversailing courses of slabs: the building of the corbelled vault.

In our present enquiry we are limited to Western Europe, but the prescriptive ritual features already enumerated appear in rock-cut collective tombs in the Eastern Mediterranean from Early Minoan times (third millennium B.C.) onwards, and among the earlier of these are likely to be found the ancestors of the western series. But we shall see that what appear to be the earliest chambered tombs in the west, those of south-east Spain, are not in fact rock-cut, but employ the corbelled vault with considerable competence; nevertheless as we have seen, rock-cut tombs occur in several areas, and in Sicily contain imported Middle Minoan pottery and local copies of the same painted wares. A special case is presented by the islands of Malta and Gozo, which contain rock-cut tombs but also the remarkable structures, of a high degree of architectural competence, which appear to have been temples but which derive in all essential elements from the chambered tomb tradition.

An approximation to the simplest form of chambered tomb cut in the rock in our area is provided conveniently by a large series in Sicily, where the type once adopted had a long life throughout the second millennium B.C. Here are the basic essentials of a roughly circular or sub-rectangular chamber, a restricted entrance and (not invariably) a minimal antechamber which may open onto a forecourt. Where the tombs are cut in a limestone cliff or steep slope the elaboration of the entrance into a forecourt is not difficult; in one or two tombs (e.g. Cava Lavinaro and Cava Lazzara) an interesting rock-cut façade with relief pilasters has been contrived. But when tombs were dug more or less on the flat it was necessary to sink a pit, sometimes with a sloping ramp or stepped descent to a level low enough to enable the tomb chamber itself to open from it. This modification can be seen in many areas of Western Europe—in the Malaga region, near the mouth of the Tagus and in the Marne for instance. The sloping or stepped ramp can be developed into a long gradually descending approach or *dromos*, a point we shall return to later on; it is of course a natural enough structural device to obtain access to an underground chamber, and in some sense the length of the *dromos* would be a function of the angle of slope of the natural ground surface. But as



Simple burial chambers: 1 and 2, rock-cut (Sicily); 3, stone-built (Spain)



Multiplication of burial chambers: 1, rock-cut (Sicily); 2, stone-built (England)

Lower courses of corbelled vault, Clava, Inverness-shire

we shall see, other factors in chambered tomb architecture above ground may have to be taken into consideration.

The construction of a collective tomb to the ritual requirements of circular chamber, with antechamber and portal, as a stone building above ground rather than as an excavation below it, involved the prehistoric architect at once in certain technical problems. If the chamber was to have some form of curved or domed ceiling reminiscent of the natural cave or rock-cut tomb, this was only obtainable by true or false vaulting, and as we have seen, in Western Europe in the second millennium B.C. the false or corbelled vault alone was known. To be secure and permanent, corbelling involves the use of a considerable outer thickness of covering stones around and above the oversailing courses of the false vault, and some sort of superincumbent cairn or mound is therefore structurally inevitable. This constructional thickness necessarily increases the distance between the chamber entrance and the open air, and has therefore to be pierced by a covered passage. What in archaeological nomenclature has become called a "passage grave" appears in fact to be the inevitable structural outcome of providing the necessary access to a circular collective burial chamber of corbelled construction.

I cannot here go into the problems involved in the sudden appearance in southern Spain of the tradition of the corbelled vault in fully fledged form at a date which must be relatively early in the second millennium B.C.—at least a vault in which corbelling was carried up to a considerable height, and finished off with a capstone. The classic examples are in the cemetery of Los Millares in Almeria, where numerous tombs have the relationship of chamber diameter to passage length as 1 : 1, with a consequent ratio of 1 : 3 in the diameters of chamber and covering cairn, and some tombs even have the passage shorter than the chamber diameter. It would seem that the restricted architectural competence of the chambered tomb builders imposed limits upon the diameter of the vaulted area, and the enlargement of the tomb into a more monumental structure could only proceed by means of a lengthened passage—to take two south Spanish examples, Romeral has a chamber/passage ratio of 1 : 5 and at Cueva de la Pastora it is as much as 1 : 9·5.

It seems likely that this development of the passage element in chambered tombs in the Iberian Peninsula, and the presumable acceptance of its enhanced ritual importance, led to the development of the lengthened *dromos* approach to contemporary rock-cut tombs, as seen for instance in the Tagus estuary, near Malaga, sparingly in Mallorca, in the Montagne des Cordes group near Arles and at Anghelu Ruju in Sardinia. The appearance in Mycenean Greece in Late Helladic times of both rock-cut and corbelled tombs with the long *dromos*, of which the most famous example is the Treasury of Atreus at Mycenae itself, raises archaeological problems of the greatest interest which we cannot enter into here. Although the majority of classical archaeologists find it difficult or impossible to accept the idea of a derivation of such tomb architecture from the western Mediterranean regions under discussion, yet the question cannot be regarded as closed and deserves a full and detailed treatment. One point that should be noticed is that the *dromos*, in the western Mediterranean or in Greece, is an unroofed approach which, as the Myceanaen evidence clearly shows, was deliberately filled up after each burial, whereas the covered passage in the above-ground tombs was normally only blocked at its outer end in similar circumstances.

Leaving the Mycenaean tombs out of the question, however, the corbelled passage-grave type of tomb in its simple or primary form has an extraordinarily wide distribution in western and northern Europe. The corbelling technique is seen in full vigour, for instance, in Brittany at Ile Longue and elsewhere, in Ireland at Tibradden and in Scotland in the Clava tombs near Inverness; side by side with the false vault there developed the simpler, more literally megalithic structure in which, although oversailing courses were often used, particularly to bridge the angles of polygonal chambers, the construction was essentially orthostatic and trabeate, with flat roofing-slabs carried on uprights. Nor did the corbelling tradition cease with the adoption of variant and more complicated plans, as we shall see; indeed the greatest triumphs of chambered tomb architecture in the British Isles, where the vault may rise to a height of up to nearly 20 feet above the floor of the burial chamber, belong to a phase of architectural elaboration shortly to be described.

It appears that a problem which early confronted the builders of chambered tombs was the necessity of providing not a single communal chamber for burials, but a number of separate compartments or cells within the main structure. The original tomb-type was monocellular, but owing to some changing trends in ritual and perhaps in social structure, it became multicellular. This multiplication of burial units took place in most of the main centres of chambered tomb building, and what is interesting to note is that different groups evolved different solutions of a common problem. Already in some of the Los Millares and allied tombs in Spain a small ancillary chamber, or loculus, had budded off, so to speak, from the main vault, usually contrived above the main floor level. This in turn led to plans with more than one such ancillary loculus, one notable series being the cruciform passage-graves of the British Isles, with three symmetrically placed minor chambers, and indeed in Orkney one can follow the process in an eccentric development culminating in no less than fourteen loculi set like Brussels sprouts around an elongated chamber. In Sicily, a parallel but wholly unconnected desire for separate burial units led to a series of little recesses being set radially round the tomb-chamber of rock-cut monuments. This development appears to have led to a new relationship between the deposition of burials and the main chamber area, for with the placing of the dead in the loculi, what had been in formal terms of planning the burial chamber might itself be free of interments on its floor.

Evidence of such a shift of ritual interest does in fact seem to be afforded by a recently excavated Irish tomb, basically of the cruciform plan just described, but in which the chamber area had been enlarged to such a diameter that it could never have been spanned by a corbelled roof (and may indeed have been roofed with timber or even thatch), and the burials—cremated in this instance—were located only in the three burial niches. An even more striking instance of analogous development is found in the Maltese temples. Behind the

Ruins of stone-built tomb of passage-grave-type, Clava, Inverness-shire

complex ground-plans of these lies the simple burial chamber of the rock-cut type; the earliest temple, however, is already developed into a three-compartmented plan. But from here further complexity is achieved by what one might call, to borrow a concept of Summerson's, an aedicular process, whereby added units, each representing yet another replica of the original monocellular burial vault, were combined to form double-apsed elements. That these units were conceived of as repetitions of the original simple form is beautifully shown at Hal Tarxien, where one apse retains the lower part of a curved façade of the type known to have been normal at the entrance of the monuments, but here of course an internal feature. And again, in the rock-cut temple and burial vaults of Hal Saflieni in the same island, exterior façades are reproduced as interior features in even more striking form. And finally, the enlargement of the multicellular structure into a gradiose structure once again faced the architects with a problem beyond their powers, for however the Maltese temples were roofed, wholly or in part, it cannot have been by corbelling or capstones. Corbelling indeed begins in many instances to spring from the chamber walls, but it could never have been carried up to a height sufficient to span the requisite space.

An alternate method of securing a multiplication of separate burial-places was to arrange more than one chamber, and usually two in symmetrical pairs, to open from a common passage. Sicilian rock-cut tombs adopt this solution of the problem on occasion, and of course the Maltese plans just described are a version of this same theme; it was very popular in south-west England, with up to at least three pairs of lateral chambers opening from the passage, as well as one at its end. Each chamber here becomes a separate aedicule, and little change of concept is involved in another alternative, known in France and Britain, in which several burial chambers are contained within the same covering cairn, but each has its independent entrance. Here one is obviously dealing with an anarchic dissolution of formal planning, in which the monument has lost its sense of direction.

There remain for comment two other alternatives for obtaining separate burial accommodation, and that is the subdivision of the chamber itself. In the Pyrenees and in the British Isles an elongated parallel-sided burial chamber may be divided into a series of segments by high sill-stones set across at regular intervals, in such a manner as to make one visualise the burial rites as involving an uncomfortable sort of hurdle-race in a dark confined space. An alternative developed in Orkney (that home of lost megalithic causes) was to multiply what had started as structural slabs set at right angles to the chamber walls to form a series of stalls or compartments in which the bodies were placed on either side of a central gangway.

There remain for mention two other forms of specialisation of widespread occurrence. The first is the intermittent and sporadic use of carved ornament as an architectural adornment. This may range from the cutting of simple recessed mouldings round the architraves of the tomb entrance, or, as in Malta, the elaborate dressing of the stone surfaces to make an architectural job of it. Elsewhere we are mostly concerned, as we have seen, with stylised representations involving reminiscences of the face or breasts of a female deity, or in which all anthropomorphic meaning has dissolved into a maze of geometric patterning. In stone-carving and stone-working generally, the Maltese temples stand alone in the western Mediterranean, and there is every reason to see in them evidence of contacts with the higher technologies of the Minoan and Mycenaean worlds.

The second development is concerned with the emphasis of the entrance and forecourt area, as if to highlight ceremonies taking place at this point. The shallow curved façade which we have seen tentatively employed in Sicily, for instance, is developed into a monumental arc with the tomb entrance at its centre; two regions as far apart as Sardinia on the one hand, and the coasts and islands at the head of the Irish Sea on the other, both delighted in grandiose exaggerations of this theme, which in Ulster took on ever odder and odder forms until the crescentic façade extended its arms like the claws of a lobster and an almost closed court was in fact produced.

This peculiar development of the forecourt area in certain British chambered tombs may not have been unaffected by contemporary religious ideas in these islands to which another group of ritual monuments points. The religious concepts involved in the beliefs of the chambered tomb builders seem surely to have been directed underground, towards deities of a subterranean otherworld rather than to those of the open sky. But it is in the general setting of concepts which involve a sky-god in his various aspects that our well-known stone circles such as Avebury, Stonehenge and many more would best fit, and perhaps it may not be fantastic to see in the development of the open-air forecourt ritual among the builders of chambered tombs a hint of ceremonies also sky-directed.

I have mentioned Stonehenge, and if only as a not strictly relevant postscript to my main theme I feel I must make some reference to this astonishing structure: 'such as an extraordinary high-spirited judicious Barbarian might be supposed originally to invent,' to take an apt phrase from Roger North. It is in its present form the result of more than one phase of building and alteration in prehistory, and it is unique in the same sense that the Maltese temples are unique. And it is here that I think we have a relevant connection with my main thesis. We have seen that the

Maltese temples have many, and indeed all the basic elements of the chambered tomb tradition, but they are enlarged and raised to a high pitch of architectural competence and sophistication to such a degree that they become something new. Stonehenge represents much the same set of circumstances. Basically it is a circle of standing stones such as you may find on many a stretch of British moorland or mountain, but it is enlarged, refined, and turned into a work of architecture of no little merit. Alone of contemporary monuments outside the Mediterranean world the stones are dressed to shape, have something that approximates to a feeling for the qualities of entasis, and even what looks like compensation for perspective; of its component stones, one group was brought from thirty miles away to the north, the others from west Wales.

Within the present framework of our knowledge of Europe in the second millennium B.C. these unique qualities of Stonehenge do not perhaps seem so inexplicable as they did a generation ago. We can date the final state of the monument as we see it today reasonably enough around the fifteenth century B.C., and it is just at this time that a varied body of archaeological evidence combines to demonstrate to us the contacts existing between the Mycenaean world of the Aegean and not only the western Mediterranean, but with Britain. I would suggest that the parallel which I made with the Maltese temples (themselves not far removed in date) is an apt one: in both instances we have a local architectural tradition, vigorous but primitive, invigorated by contact with a higher standard of technological achievement, skill and experience, and in both instances the point of origin of this new and enhanced set of standards and techniques is the Mycenaean world. What I have tried to point out in this essay are points of similarity, convergence, and parallelism in the most ancient ceremonial architecture of Western Europe and I hope you will agree that not the least curious instances we have been able to detect are these where the barbarian and the civilised worlds come unexpectedly into contact.

DISCUSSION

Professor V. G. Childe, D.Litt., D.Sc., F.B.A., Director of the Institute of Archaeology and Professor of Prehistoric European Archaeology in the University of London, in moving a vote of thanks said: I am grateful for the opportunity given to me of hearing this paper and then the privilege, after so doing, of being allowed to express my own appreciation and gratitude to Professor Piggott and, I am sure, that of my colleagues.

The study of megalithic monuments in the past used to be, in my generation and the immediately preceding generation, a kind of game in which those participating sat in an armchair with a lot of cards of plans and shuffled them around to find a right order and a logical sequence. In that way a chronological story of the development of the tombs was constructed. Professor Piggott has taken us away from that method of approach. He has presented these tombs to us as expressions of human purposes and needs and has deciphered them to us in terms of the satisfaction of those requirements and purposes. They must have been very serious purposes. The sizes of the tombs are quite stupendous, and not only the tombs but the mounds which cover them. There is a cairn in the remote island parts of Scotland which I am assured contains as much stone as a good-sized village church and yet those stones had to be at least broken off the outcrops and dragged into position without the aid of metal tools or tackle or any other elaboration. I think we may say of the persons buried in those tombs that their tomb is a sacred altar and this, I think, is what Professor Piggott in his eloquent and beautifully illustrated account has helped us to realise.

Mr. John D. Evans, in seconding the vote of thanks, said: It gives me very much pleasure to second the vote of thanks because I think Professor Piggott's angle of attack is one which very much needs re-stressing. To architects it may seem strange that this should be so and that these monuments have not normally been treated in terms of function but in terms of typology and forms and techniques of construction. In many cases there is some excuse because some of the monuments are so ruined that one can hardly imagine them as real buildings.

Recently my own experience of problems of megalithic architecture has been in Malta and there one comes up against this question of function. The later Maltese monuments are very well preserved and are so impressive and enormous that one has almost a feeling that the religious awe they inspired is lingering in the atmosphere. Furthermore, in Malta, as we have been reminded recently by events there, religion is still very much a force and one can see parallels which illustrate the functions of the monuments in the modern religious architecture of the island. I am thinking of the double temples and it is amusing that one can illustrate their function from the modern churches. There are a number of double churches and in each case one of them is older and much richer, while the other has been added later.

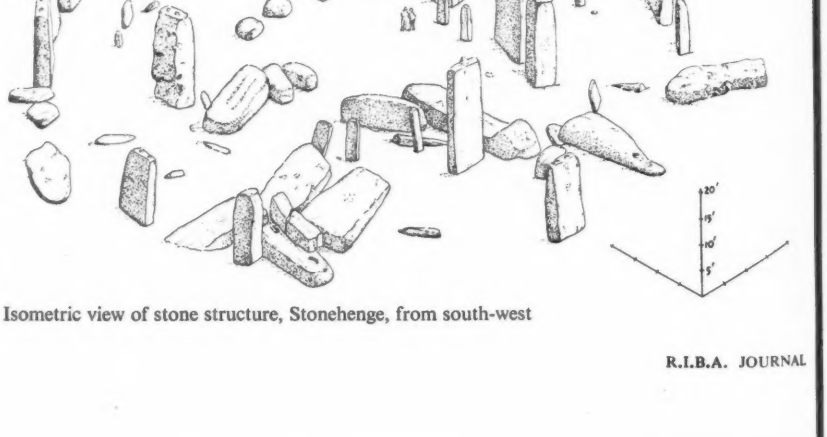
Mr. J. Murray Easton [*F*]: Is there any ethnological unity among these peoples on the western coast of Europe extending from Spain to Scandinavia as evidenced by these monuments?

A friend of mine named John Layard has written a book called *Stone Monuments of Malekula*. According to him the business of megalithic building was going on briskly in 1913 and I wonder whether that still exists or whether civilisation and the radio have destroyed this strange custom.

Professor Piggott: The question of the possibility of an ethnic community is a very difficult one. One can say broadly from tombs in Britain and Scandinavia and the Western Mediterranean that you do get a type of person in whom the proportion of length to breadth of skull is noticeable. He is a narrow-long-headed man. But many types of men can be put within this class. One cannot from physical remains deduce anything about skin or hair or eye colour or anything of that kind. Therefore I would hesitate very much to make any association of physical types from the evidence of these monuments.

The builders of Malekula are a very fine classical example of a people who continued building stone monuments until recent times. One can also instance the hill tribes of Assam, described by Professor Hutton, which give a valuable indication of how the technical problems involved in transport and erection of large stones were solved.

Mr. B. B. Bednarczyk: It seems to me that a study of archaeology gives us an insight



Isometric view of stone structure, Stonehenge, from south-west

not only into the purposes of the monuments but into the psychological, physical and philosophical motivation of architecture in general. I should like to know whether Professor Piggott thinks that the tombs he has shown us have any anatomical references.

Professor Piggott: I think that is one of the questions which archaeology cannot answer because of the nature of the evidence. I do not think one can say more than that ritual performances have taken place and that the structures have been made to allow certain performances to take place, but what those performances were and, even more, what were the beliefs that motivated them one cannot say.

Mr. Charles I. Hobbis [*A*]: I should like to ask whether Professor Piggott has any suggestion to make as to how these enormous stones, such as those at Stonehenge, were raised. When work was going on at Mycenae there were two stones which were lying on the ground. I was giving advice on that occasion and with modern tackle it took nearly five days to raise those two stones and put them into position.

Professor Piggott: That is, of course, a great problem. I can say two things about it. The first is that time was certainly no object. The second is that I have been very much impressed myself when dealing with people who are accustomed to handling big stones with the simplicity of the equipment with which such people move large stones. They can move them with the relatively simple use of levers and without a large labour force. That does not mean that the building of Stonehenge was not an extraordinary achievement. Some of the stones there weigh 40 tons and some of them are nearly 20 ft. high. The two problems are the raising of the uprights and the setting of the lintels upon them. The uprights are in relatively deep pits which were sloped and the stones were put up as telegraph poles are to-day.

The best suggestion I have heard regarding the putting on of the lintels was made by a civil engineer visiting Stonehenge. He had had experience of moving large stones in south-east Asia with a primitive labour force and he suggested that what was used was a timber crib on which were put alternate layers of logs, raising them upon one another and gradually bringing the stone up to the required height. That seems to me to be an explanation which fits the circumstances very well. The alternative of a sloping ramp of timber would have left sub-structure marks such as post holes and such marks do not exist. No doubt there were civil engineering problems of the first order in connection with Stonehenge and I do not think there are many contracting firms at present who would like to take them on, even with modern equipment.

Mr. C. I. Hobbis [*A*]: At the Treasury of Atreus each one of the stones has a circular plan shape and in section is parabolic. Can Professor Piggott suggest any way in which this regular shape was achieved?

Professor Piggott: I wish I knew the answer. Stonehenge raises the same problem. One problem in connection with Stonehenge and with the Treasury of Atreus is whether the builders had a knowledge of scale relationship. Did they understand that so many units on the ground could be represented by so many smaller units on a plan? I think they must have had that knowledge. One knows, for instance, that in ancient civilisations the business of making a plan of a town was well known and I do not think that the builders of the Treasury of Atreus found it beyond their capabilities to work out the sizes of the stones in advance. On the rougher monuments the spacing of the continuous closed circle of lintels on the outer peristyle, such as at Stonehenge, could have been achieved by trial and error but nevertheless I think it must have been worked out in advance.

Mr. Ernst H. W. Priefert [*A*]: May I ask whether Stonehenge was ever finished or whether it was partly destroyed by violence or whether it simply fell derelict?

Professor Piggott: So far as one can see it seems likely that it was in fact completed. Whether its present appearance is due to accidental collapse is another matter. It does not seem very likely that the lintels simply fell off the uprights. They could only be removed by pulling them off and the general feeling is that there was a deliberate slighting or semi-destruction of the monument.

When it happened one does not know. It could have been done in Roman times although the reason would be obscure because by that time Stonehenge would already have been an ancient monument. There is a possibility that it was done in the Middle Ages because it was a pagan monument, Apparently there were individuals in the seventeenth century when the Puritan Army was in the district who wished to destroy it because it was a pagan monument, but whether they carried that into practice is not known.

Mr. L. H. A. Fermaud [*F*]: It must have been a difficult problem to get the stones up. How did the destroyers get them off?

Professor Piggott: I do not know. I should have thought it would have been necessary to put ropes round them. The lintels are not held very securely and I think they could be pulled off with a rope. Certainly the tenoned joint would not hold a lintel. The cavity in it above the tenon has a play of several inches.

Mr. V. Glasstone [*A*]: Professor Piggott has told us that the bodies were just thrown aside. Were there no sarcophagi or anything of that kind?

Professor Piggott: There was certainly no form of coffin. Some of the Mycenaean tombs had a wooden bier on which the corpse was laid. The throwing aside of the bodies comes down into Homeric thought, namely, that the bones became dry and the life force had completely gone from them and it was therefore all right to bundle grandma into a corner because she was getting in the way by sprawling about on the tomb floor!

Mr. Bryan Westwood [*F*]: I should like to know whether there is any generally accepted theory regarding the enormous lines of stones such as are to be found in Brittany. Are they part of the tombs or are they something different?

Professor Piggott: Although those lines of stones are megalithic one cannot relate them directly to the chamber tombs in the same region. One does not know very much about them. Excavation of standing rows of stones is a chancey business. By and large they do fall into the general period when the large stone monuments were built but what they represent one just does not know. I think it not unreasonable to assume that they were concerned with some kind of ritual which involved a procession. Whether it involved dancing or walking in some way we do not know but it is possible that the long rows of stones were connected in some way with a form of ritual which involved movement from one end to the other. Dancing had an importance in all forms of primitive religious ceremonies and the two forms of dance were the processional and the circular.

Mr. G. Whitby [*F*]: I suggest that the bones which were shown in some of the illustrations must have taken a long period to get to that stage. I am wondering if these tombs were used over a considerable period or whether the piles of bones were the result of despoliation later.

Professor Piggott: These tombs were certainly used over generations. They were family vaults and there is in fact direct evidence that in certain instances the bones from the burials show peculiarities which can only be explained by relationship within a family. There is no doubt that successive burials took place over a fairly long period of time. I cannot guess what period of time but it was certainly several generations, and in fact it was because of the ritual necessity of having a place to put bodies in that this particular kind of tomb came to be built. There had to be a permanent burial-place to which intermittent access could be made as various members of the family died. Many of the tombs were used for perhaps a century or so, and perhaps even longer.

Mr. G. Whitby [*F*]: These tombs do show us that megalithic man, whose economy would have shocked the present Chancellor, did find the spare energy to put as much spiritual effort as he could into his work and achieved some considerable result from it.

Russian Architecture and Building 1955

By J. H. Forshaw, C.B., M.C., B.Arch., M.T.P.I., F.I.L.A. [*F*], Chief Architect to the Ministry of Housing and Local Government and to the Ministry of Health, and

R. C. Bevan, M.A., B.Sc. The Building Research Station.

At the R.I.B.A., 21 March 1956.

Mr. Basil Spence, O.B.E., A.R.A., A.R.S.A., Vice-President, in the Chair.

Mr. J. H. Forshaw: The tour in September was in the nature of a return visit in response to an invitation from the Russian authorities. A small party of Soviet officials came to this country in July and visited the principal cities and housing developments, including certain new towns and other building projects and factories. A programme on somewhat similar lines was arranged for us through the Foreign Office and Embassies concerned.

Our party also was small and included Mr. Phillips, Mr. Bennitt, Mr. Bevan, Mr. Foote and myself. We were fortunate in our interpreter, Mr. Paul Foote. Moreover, Mr. Bennitt, too, as we discovered, was not making a first visit. With these advantages and the help of the Russian authorities, including the Moscow Union of Architects, our plans worked well. We received friendly welcomes everywhere. The weather was also kind, for the fine summer continued in Russia.

European Russia is relatively small compared with the great land mass of the U.S.S.R. and that part over which we travelled, from Leningrad to the Black Sea by way of Moscow, Stalingrad and Sochi, is about 1,500 miles.

Travel by air had advantages. The tour in the time was possible only by this means. It emphasised the size and scale of country and landscape, the great plains of agriculture and resources of forest and water. Our centres differed in character and size. Moscow, the much enlarged medieval city and present day capital with the latitude of Edinburgh and population of 4,137,000, planned perhaps for 6,000,000 (population in 1906 was 1,173,400), was first. Then there was Leningrad, formerly St. Petersburg, founded by Peter the Great and until 1918 the capital, with the latitude of the Shetlands. Its population at the present time is 3,191,000, and the population fifty years ago was 1,487,700. The next was Stalingrad on the Volga, formerly Tzaritzin, destroyed in defence against the German invasion of 1942, now reconstructed. It is a manufacturing city of some 500,000 population (population fifty years ago was 55,900) and on the latitude of Paris. The fourth centre was Sochi on the east shore of the Black Sea. It is a town of health and rest centres with a population today of 50,000. It was formerly a coast village, and has a Riviera climate and is on the latitude of Florence.

We came to Helsinki by B.E.A. and joining the Russian plane passed along the Finnish coast, turning east of Viborg for Leningrad, and came down shortly after 5 p.m. We were welcomed and entertained by the President and officials of the Leningrad Union of Architects. At 7 p.m. we left for Moscow and at 9.30 p.m. were over the city. We landed at the airport at 10 p.m. and were received by representatives from the Embassy and Soviet officials. Soon we arrived at our hotel and were received and entertained at a midnight meal by Mr. Abrosimov, Secretary of the Moscow Union of Architects. Next morning we started a series of meetings with senior representatives of the City Soviet, the City Architect and Planning Department, the Union of Architects, viewing the Moscow town plan and hearing details of development; attending the Building Exhibition, the research stations and building projects, including housing, schools and hospitals; visiting the new University, the Agricultural Exhibition and also several stations of the Metro Underground as well as factories working upon prefabrication. At the Kremlin[1] we saw the museums and churches. Restoration work is in progress on the famous Bell Tower and on the Cathedral of St. Basil in the Red Square. Our visit to the Embassy was one of unusual interest.

In Stalingrad we met the City Architect and senior member of the Town Soviet, and the Medical Officer of Health and the Director of Sanitation. We saw the film *The Victory of Stalingrad.* The new town plan was explained[2]. Visits to reconstruction

Map showing the tour centres—Leningrad, Moscow, Stalingrad, Sochi

schemes, the town centres and two new hospitals were made, also to the new pier, the Volga–Don Canal and the new hydro-electric power plant.

In Sochi we were received by the Medical Superintendents of the Health Institutions and visited several centres, baths, and rest homes concerned with rehabilitation. The new concert hall and pavilion, harbour and docks, the new railway station, the civic hall and open air theatre were described by the City Architect.

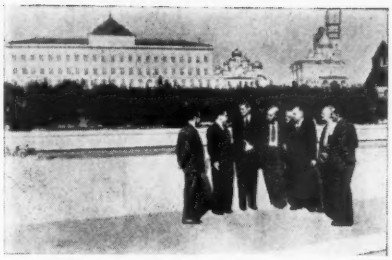
In Leningrad we met the Union of Architects and the City Planning Authority. The development plan was explained. We visited large areas of new housing on the south and new industrial development in the south-east adjoining the Neva, also the large stadium north-west of the town at the end of the Morskoi Prospect. Historic buildings are well cared for and a great deal of restoration work is in progress. We visited the Palace of Art, formerly the Winter Palace, and the Hermitage Gallery and other museums and also the restored palace and gardens at Peterhof[3].

Our inspections naturally centred around where we stayed. We had opportunity to vary, and in fact changed the programme on occasion, sometimes dividing visits and selecting from equally important projects. Relaxation in Moscow included visits to the Bolshoi, in Leningrad the Mariensky and in Stalingrad the reconstructed theatre, the open-air theatre at Sochi making us appreciate the warmer nights of the south.

To have seen more of the countryside would have been useful. Some journeys particularly stand out: the visit to the architects' rest house in an eighteenth-century mansion outside Moscow; another across country towards Peterhof. Other journeys took us through changing suburbs of old wooden houses, some gaily painted, or by green belts of forest or agriculture and others at high speed to the airfields 20 or 30 miles outside.

It emerged from discussions that since the victory of Stalingrad, which marked the end of the war for Russia—for then the whole country became confident of ultimate victory—reconstruction and new developments had been studied and planned seriously. The size and urgency of the post-war task compelled a complete turnover to a system of industrialised building employing standardised construction for all but special projects. The bulk of new urban building consists of standardised prefabricated concrete construction in one form or another.

Important civic projects, however, and also the building works of the Ministerial Departments, for example Trade, Timber, Transport, Mines, Health and Food, are carried out in accordance with plans prepared to serve the special purposes. For work of this nature normal practice applies and bricks or blocks, depending on availability, are used for walling. The framework is enclosed with panels of blocks or bricks backed often with lump brickwork 18 in. thick and faced with rendering, stone or ceramics, particularly the latter. Facing bricks are in limited use in some zones, but generally these are retained largely for



The Kremlin with Hall of the Soviets from Moskva river. On the right the Cathedrals of The Annunciation, The Archangel Michael, The Assumption, the Belfry of Ivan the Great (architect Friazine, 1505–1508) now under reconstruction. The party with interpreters in foreground

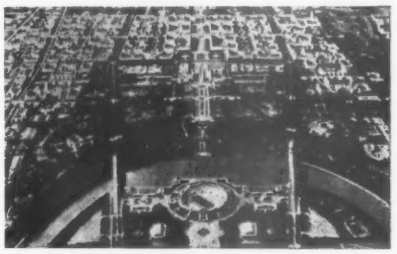
restoration work. Housing (i.e. flats), schools, hospitals and offices of all kinds are built to highly standardised systems, employed in the widest application. The schemes are graded and construction is suited to climatic zones throughout the U.S.S.R. The space standards for new housing in flats appear to be generous, and it is not easy to make comparisons on account of the different way of life. Not only are some living rooms used generally for sleeping one or two people, but sometimes two families are accommodated. This may or may not be a temporary practice during great pressure of need. If that is corrected eventually then the space standards are high.

The climate of course bears on space planning and in the south special provisions are made for more open living—balconies, etc., and higher rooms. Prefabricated components of all dimensions are produced, including foundation blocks, framed floors and wall panels, staircases and all joinery. Internal bathrooms are general practice, and special castings contain sectional plumbing, with water and soil pipes prepared for connection. Most parts are interchangeable and structural members with corresponding components are adapted for a range of buildings. These embrace standard flat blocks of 4, 6, 8 and 10 storeys; schools 4 and 6 storeys and hospitals 4, 6 and 8 storeys. For taller buildings the frame is either of reinforced stanchions poured on site, or built up of precast stanchions in two-storey heights and welded together by steel plates. More recently a cellular cross-wall standardised system has been developed and experiments up to 6 storeys are being undertaken. Modular planning is adopted in horizontal and vertical application and consequently the shell of the building is simple and box-like and maximum speed is attained.

The factory methods depend of course on efficient machines and maintenance is frequently acute. Organisation on the whole appeared good in the majority of operations. New plant is being evolved to simplify processes. In many departments women operate heavy machines successfully. Most factories work two shifts in summer at least on six full days. The precision of the factory extends to the sites so that much

The Red Square, the Cathedral of St. Basil left; the Lenin Tomb in front of the Kremlin wall; behind, the Saviour Tower and Gate

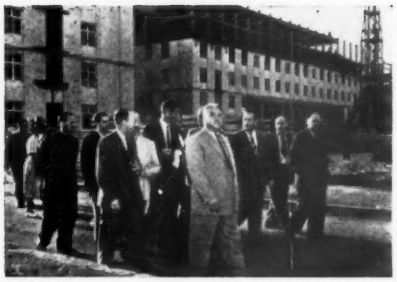
Moscow Town Plan. Areas of reconstruction and architects concerned with the redevelopments, e.g. No. 3 Area, South-west, Architect A. V. Vlason, and Area 8, Gorkii Street, Architect A. Mordvinov



Model of south-west development Area No. 3 containing University and recreation centre

The new University on the Moscow Hills site

assembly drill parallels the routine of the factory. All this activity is impressive, especially when related to the huge organi-



Typical housing development by the Moscow Soviet

Central Research Institute for Industrial Building, Moscow

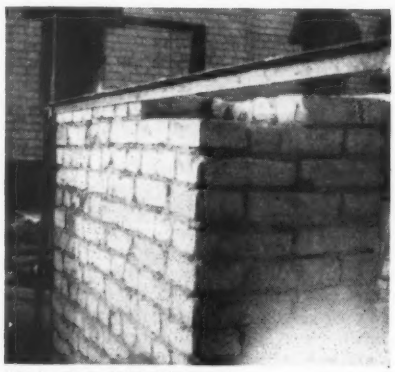
sation and the immense sites of many acres. There is ample labour, but we were told that site operatives were constantly moving into factories and consequently an increasing number of women were employed on building site work. The general tone and physique is high, and the sites we visited were maintained in orderly condition.

As to the quality of work in housing and schools, much was rough but not careless. Poor application, often due perhaps to inexperience, was an obvious trouble. Materials were ample and everywhere work was substantial, perhaps overstrong. The standard of finish in the best work was not comparable with similar work of the same type in this country. Often tiles, paint and other materials were of inferior quality. Improvement in these trades and in the products themselves was noticeable when current work was compared with that of earlier years. Plastering, for example, undertaken largely if not entirely by women, showed most progress. A system of prefabrication using lightweight concrete is shortly to be explored with the object of reducing the need for wet processes on site erection and finishes.

In the standardised systems the techniques of handling and assembly have secured an enormous output and this fact alone is a matter of much pride. It seems, however, that some developments have reached such a magnitude as to disturb the authorities, who are aware of defects in design and of site planning. The uniformity, colour and monotony of the pattern and the sheer bulk of schemes draw attention to major errors in layout. The output of the factories cannot be controlled nor can stocks be deployed overnight. Consequently developments must proceed. Improvements must be sought first in corrected layouts, and this will take considerable time.

The introduction of contemporary timber buildings would secure a desirable variation. Displays at the permanent exhibition surprisingly did not include many examples of timber developments except for certain housing proposals for agricultural areas.

We were not provided with any cost analysis or price data which would enable specific comparisons to be made with the cost of building in this country. This could probably be explained by the different method of contracting by State organisations instead of by competitive tendering. My own conclusion is that there is no periodical valuation and architect's certificate, and the recorded cost when it is ascertained is the actual final cost, whatever it is.

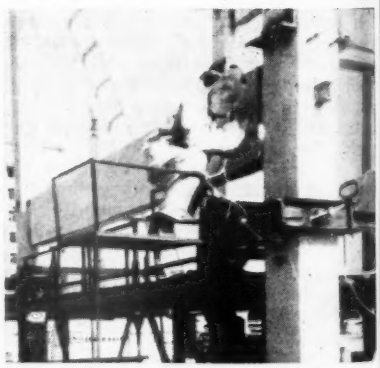


Block of pre-laid brickwork

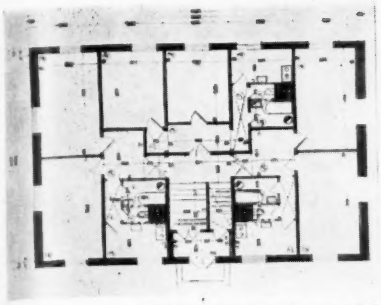
Erection of precast concrete column in precast foundation block

Most Russian architects must feel keen disappointment that the reception given to earlier contemporary work in Moscow weakened their position and influence. It is true that the time factor was critical when the decision was made to introduce industrialised methods of building. Wider collaboration in establishing a standardised system and practice would have secured more efficient and satisfactory results. Despite the vast production and programme of work completed, Russia's monumental effort lacks imagination and is wasteful. The pattern is altogether unsuited to a programmed factory output and one must conclude that in not accepting a less rigid system a serious error was made. More simple and lighter constructions capable of maximum flexibility in pattern and application would have registered a great advance in prefabricated building.

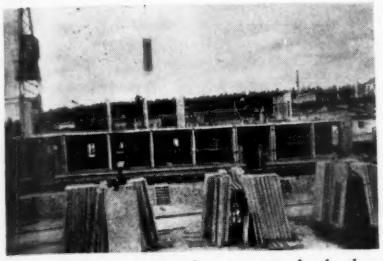
With reference to Russia's recent architecture and civic planning, it is difficult to find an explanation for the new grand motif. We should look for the prototype, if anywhere, perhaps, across the Atlantic. Yet when all is said and done, we have had our own period of terra-cotta. The Russians clearly appreciate much of their architectural tradition and heritage of iconography[4]. That a high value is put upon the preservation of examples of their ancient plastic arts is confirmed by the extensive restorations everywhere. Architects of special competence work with historians upon remarkable medieval buildings and churches and palaces of the 17th and 18th centuries. All this work is creditable and it is difficult to reconcile this attention with



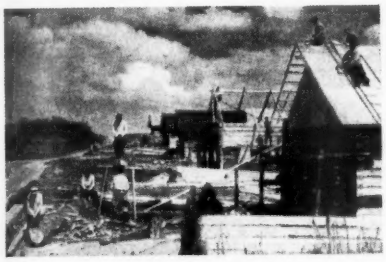
Welding of precast reinforced concrete beam to column. The erection jig is also shown



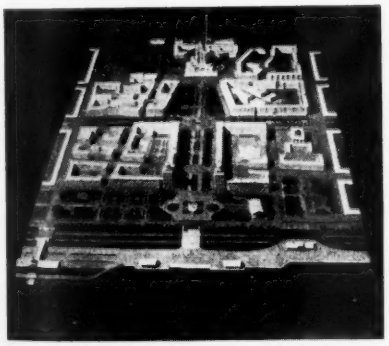
Type plan of standard accommodation; module 40 cm.



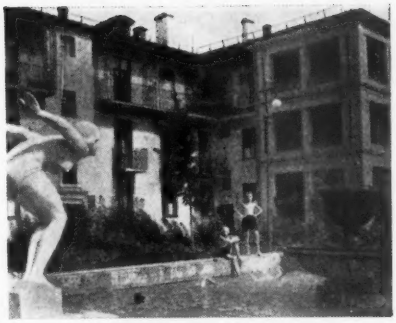
New cellular construction to standard plans based on module



Timber housing for collective farms

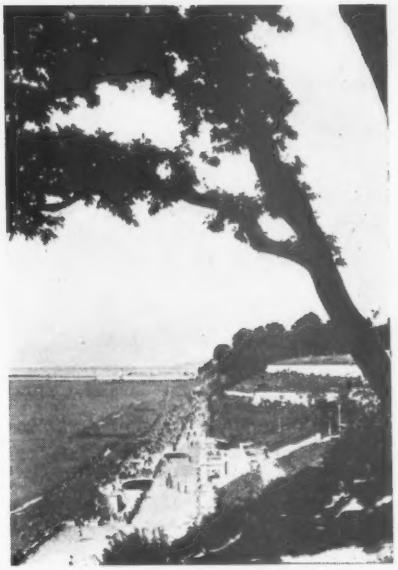


Part model of new town plan of Stalingrad, showing Civic Centre on Peace Avenue, Stalin Prospect, Victory Steps and Volga-river front



Example of new housing at Stalingrad

Entrance lock, Volga–Don Canal



Sochi. The esplanade and bathing beach in foreground, new harbour in distance

the impression one gained that the same care had not been afforded to the direction of much current work. Moscow's new skyline, for example, now considerably realised, is not wholly satisfactory I imagine to the civic authorities there.

The announcements which have been made since our return concerning Russian architecture and building indicate the trend of official opinion. A review of current work and practice expresses disappointment concerning inappropriate design and planning and the high cost of building and misuse of materials. Important and far-reaching decisions have been taken by the Soviet Government and a directive has been issued to the Ministries concerned and to the Union of Soviet Architects. All responsible are instructed to study problems afresh and to consider two important matters: the method and facilities for training young architects and the best examples of contemporary work abroad. This I think is significant.

In one's own country it is difficult enough to attempt to forecast the outcome of change in any new circumstances. In Russia—a land of different systems and customs—it is quite impossible. One may, however, wonder what will be the repercussions on the Soviet's immense building programme.

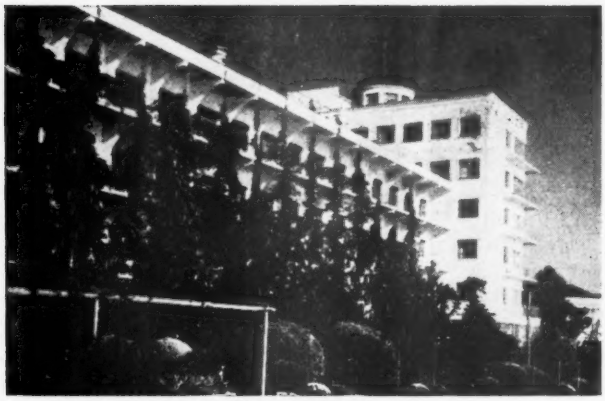
Mr. R. C. Bevan: We had but a fortnight in that vast country which covers many thousands of square miles. Even with our limited terms of reference I felt that for my particular interests we could only skim the surface a bit, and whether we have taken the cream or not I should not like to say because we were not able to delve farther down into it.

The Central Research Institute for Industrial Buildings, known familiarly as 'Tsnips', is the main organisation for building research in Russia, and it is situated a few miles out of Moscow. The Director of the Institute and his Deputy, who received us, devoted themselves personally to ensuring that we got as much information as we possibly could in the very short time at our disposal; I think that any of you who have visited a research institute will know that even a few hours can be considered as 'a moment passed', especially when one has to do everything through an interpreter.

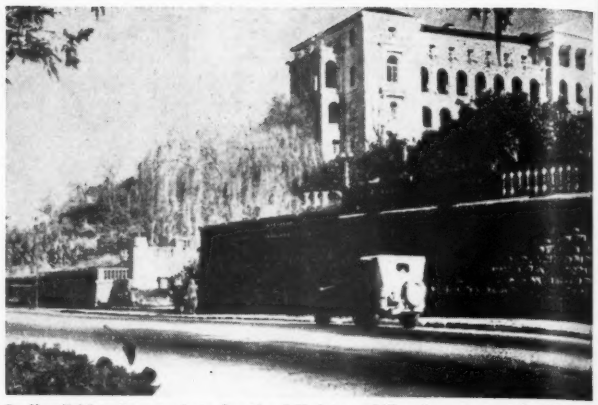
The total staff at this Central Research Institute is about 900, of whom rather more than 100 are scientific staff of a status comparable with the Scientific Officer of the Building Research Station. If we assume that that figure includes all members of the staff, then we can compare it with the 500 to 600 at the Building Research Station. But in a subject such as building research which in both countries finds homes in very many different research organisations, any direct comparison of numbers has not much meaning in fact.

There are three branches of this Central Institute. Two of them are in the Urals and one in Western Siberia, and obviously there they have every advantage for carrying out cold-weather research. The function of these branch laboratories in comparison with the main unit seems similar to that of the Scottish Laboratory of the Building Research Station.

As is usual with research organisations in this country, the Russians have a couple of councils or boards which are concerned with co-ordination of research, and as far as one could compare the niceties of the responsibilities of these two bodies it



Sanatorium for the timber industry at Sochi



Ordjonikidze Sanatorium for the Ministry of Employment at Sochi

seemed that they were very similar to the Building Research Board and the Ministry of Works Advisory Council in this country. Of course all this research is financed by the State but comes from different groups.

The actual research carried out is much the same as that dealt with at the Building Research Station. There are exceptions of course. For example, all the work on soil mechanics is dealt with in another institute in Russia. The study of mechanical equipment and plant is also dealt with elsewhere. On the other hand, at the Central Institute one finds some work which is not covered by the Building Research Station. Such differences are largely matters of administrative convenience. The whole of the Institute is divided into twenty sections or so, each of which is concerned with a particular aspect. We gathered that there were some architects employed at the Central Institute, but apparently architectural studies proper are carried out by the Soviet Institute of Architects, and there are within that Institute a number of different groups who are separately responsible for various architectural studies.

Perhaps a few words on the actual work that is carried out in some of the laboratories of the Institute would be of interest. One thing that struck me in one of the building physics laboratories was an artificial sky, about 12 ft. in diameter, the brightness of which could be varied to simulate variations in the brightness of the actual sky. Model buildings were placed inside and the light conditions within those buildings could thus be studied. Light in relation to town planning was also part of their programme, and what I thought was a most interesting and I believe unique study was one on the relation of building form to lighting.

We were also told of the studies of the fundamentals of sound insulation and sound transmission carried out on scale models, and the measurements in actual buildings.

As you might expect in a country with a winter climate like Russia's, much attention is devoted to thermal insulation problems. I might mention here the Russian code of building regulations which came into our hands. It contains extremely comprehensive requirements for thermal insulation, and I think they indicate more fully than any research in hand that the whole problem must have received a great deal of study.

All the heating of the blocks of flats we saw is done by district heating with thermal electric plant. We saw several of these plants in the course of erection, and it was evident that the Russians bank heavily on that type of system.

To return to pure research study, one found them making the usual measurements of heat loss through walls, studies of condensation and the determination of moisture gradients in walls which in such a very cold climate can create difficulties which we encounter here in a relatively mild form. Generally the problems that are studied are akin to those being studied not only in this country but in other countries throughout the world.

Much the same can be said in the case of structural research. We had very little time to spend on this, but if one can judge the value and extent of the work from the equipment, I am sure that a great deal of valuable work was being done. In the testing laboratories we were shown two 500-ton machines which our guides passed by more or less with a wave of the hand. Then they came to a 1,000-ton testing machine and said it was useful; and then they took us into a separate building and showed us a 3,000-ton machine which had been made completely in Russia. At the time they were testing reinforced concrete columns which were expected to stand a mere 400 tons.

Two of the features that struck me were the study and development of heat resistant concretes and the welding of reinforcement. The latter I think was a direct outcome of the structural work in precast concrete units and this work was obviously being done in collaboration with the metallurgical laboratory attached to the Institute which carried out fundamental studies of the condition of the metal in the welds.

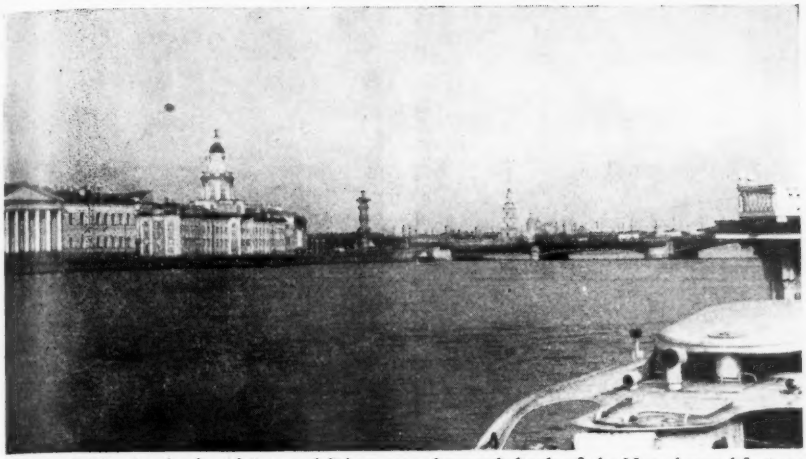
A new heavy structural laboratory was just coming into use where large precast concrete prestressed trusses were in the process of being tested. There was also a wind tunnel, and that brought to mind the fact that some years ago the Russians published a valuable paper on wind pressures. They were also giving a great deal of thought to prestressed concrete; an experimental bed was to be housed in another of the new buildings in course of erection.

The Russians also have a powerful fire research group studying fire resistance and fire protection problems on the lines of the work of the Joint Fire Research Organisation at Elstree; a recent publication which interested me was one on the fire resistance of reinforced concrete.

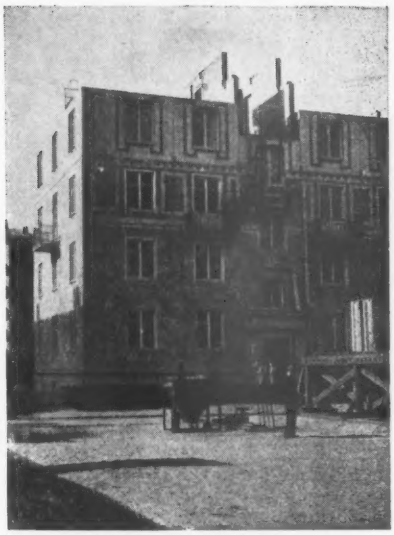
I think that brief account will show you that a great deal of work is being done on building research by the Russians. As I have mentioned, there were other organisations concerned with building research. There is for example the Research Institute for the Organisation and Mechanisation of Building, an Institute of Structural Techniques and one for silicate chemistry, and in Leningrad there is a group concerned with methods of maintaining historic buildings which is something on the lines of our Society for the Protection of Ancient Buildings but is State managed.

A few words about Russian publications. We have had Russian publications at the Building Research Station, but they are by no means comprehensive. One of the books given to us was a list of the publications of this Research Institute from the date when it was first started somewhere around 1926, and that contains a reference to something of the order of 1,500 papers. Of course the Russian problem of disseminating their research information is rather different from ours, and it is by no means clear how they do it. To view it the other way round, I am not sure whether the Russians get very many of our publications in Moscow. There were some American and English publications in the library at the Research Institute, but we saw no evidence of Building Research Station or other research publications.

Mr. Forshaw mentioned the exhibitions in Moscow. There are two. One is in some way comparable to our own Building Centre, but it covers a wider range showing whole constructions and models. The second exhibition, which was more impressive, was something we have not seen over



Leningrad. The Academies of Arts and Sciences on the north bank of the Neva beyond fortress and churches of St. Peter and St. Paul (Architect, Trezzini 1717)



New experimental flats, Leningrad

here, for it is largely an exhibition of full-scale mechanical plant, plant for materials-handling, cranes and plant for trenching in frozen ground—the last something with which we are not concerned over here.

In efforts to disseminate the results of research, lecturers are sent out to various parts of the country and to the building sites. That is something we do not have over here, but of course the building sites in Moscow were on a very much larger scale on the whole than many of ours.

Turning to the techniques of building in Russia and the materials which they use, a good deal has been written already about this and in far more detail than I can give. I can do no better than to suggest to those of you who want further information to refer to the articles which were written by a group of architects who visited Russia in 1953. I shall not have much to say on materials because, broadly speaking, and with one exception which I shall mention, they have pretty well what we have here. The exception is in flooring. Practically all the buildings which we visited had some form of timber or stone floor finish. Coloured finishes such as we have were conspicuous by their absence.

The two main methods of building were in brickwork and heavy precast concrete. It is common knowledge that the Russians have claimed very high rates of bricklaying, and we now know how those rates are achieved. Most of the work is in a thickness not less than 18 in., which is a requirement imposed not necessarily by structural needs but by the necessity for ensuring a high standard of thermal insulation and heat capacity to meet the climatic conditions. With massive brickwork of this kind there is of course little need for a careful, workmanlike job. Much of it is rendered, and the rendering was certain of having a good key. It is an interesting reflection that on one or two occasions when passing through the country we did see the odd bricklayer at work in the more traditional method of bricklaying—the single man working on his own, handling his bricks and mortar in the customary fashion. Both clay and sand lime bricks were being used extensively, which is rather in contrast to what we have here, and we heard a good deal of research work was going on in the study of clay lime bricks.

The ceramic tile used as facing was L-shaped in section, the shorter arm being bonded in the brickwork. I understand that these rather pallid tiles are used throughout the country, and we were told that production necessitated their use even though many architects did not consider the tiles to be a very inspiring finish.

A great deal of attention is given to prelaying of brickwork. We saw a building site where the slab is built in a jig and hoisted by a crane into position. There is very little use for hollow clay blocks common in many countries in Europe, particularly Switzerland and Germany; nor did we see much in the way of lightweight concretes. We were interested to hear that a meeting had been held in the Urals at which some 400 engineers and building technicians attended to discuss developments in lightweight concrete.

So far as precast concrete work is concerned we have of course in this country quite a background, and I do not think that there is anything really novel about the Russian work apart from extent and magnitude. We visited a precasting factory which was wholly mechanised except for the placing of the concrete in the forms, but the point which struck me most about that factory was that the aggregate had to be brought from quarries some hundred or so miles away. The Russians regarded that as quite a normal operation.

I must mention the attention which the Russians are paying to mechanical equipment and to the mechanisation of building generally. The crane is of course an essential piece of plant, for without the crane the precast systems could not go ahead, and from a distance a large building site looks rather like a shipyard. It is not an uncommon sight to see three or four large cranes serving a single large building, and in the development area near the University we counted something like forty or more tower cranes at work. Research in that field is also going on and some of the papers which have been published show only too clearly that the Russians have a real sense of the importance of mechanisation as a time saver.

One little example struck me as being quite significant. One of the problems of the tower crane is to get it quickly round corners, and we were shown the methods which had been developed to overcome the difficulty. One was by a third rail and fifth wheel, and the other was by bogies; both methods are known here but have never been tried out.

It is possible of course to build houses privately in Russia. They range in cost from 9,000 to 120,000 roubles, but one cannot attach any real significance to that nor obtain any comparison from a mere change of those figures into pounds. These houses can be bought and sold according to the owner's wishes, and most of them are in the form of small timber houses near Stalingrad. I do not think that they could contain more than two rooms and they compare most unfavourably with some of the older timber buildings, now unfortunately in a state of dilapidation, which we saw on one of our journeys out of Moscow. One gathered that those old houses had been built after the burning of Moscow in 1812, and certainly the decorative timber work was something to be admired. They still had some remaining traces of colour, and it suggests that in their heyday they were an acquisition to any country. But now they are little more than slums, lacking all internal sanitation and due for demolition as blocks of modern flats grow up around them.

It is not easy to summarise, for I have touched on only a few items, but I think I can do so fairly if I say that the Russians are meeting their vast demand for building by extensive research and development, especially in mechanisation, prefabrication and standardisation.

Kirov Stadium at head of the Morskoi Prospect fronting the Gulf of Finland

The restored Palace of Peterhof (Architect Rastrelli 1747–1752) now fully restored after destruction during the German invasion

Mr. S. W. C. Phillips, C.B., Under-Secretary, Ministry of Housing and Local Government, proposing a vote of thanks, said: I am sure you will all agree that Mr. Forshaw and Mr. Bevan have given us a very interesting, indeed fascinating, account of what they saw, and of the impressions which they brought back from their visit. I feel very confident in saying that because I was one of those who had the privilege of making the trip, and as I sat listening tonight I found it quite stimulating to be reminded of many of the things we saw during that very crowded fourteen days. If I felt that way, I am sure that for you, coming fresh to it, your enjoyment and appreciation were even greater. We are greatly indebted to the speakers for having taken an enormous amount of trouble in giving this account of their impressions.

As a layman speaking to a body composed mainly of experts, it is hardly for me to comment on the architectural or technical aspects of some of the things we have been told this evening. I think I can best show my appreciation by commenting on one or two of the things which struck me in a general way.

You will have gathered from the account you have been given that we had an extremely busy—in fact very crammed—fortnight of activity in the Soviet Union. We were on the job from morning to night, with a long day sandwiched in between. We started at about 9 a.m. and rarely finished much before midnight or one o'clock. We were on the move most of the time and we saw an enormous amount. It was a very enjoyable but I am bound to admit a very exhausting experience.

Mr. Forshaw has remarked on the cordiality with which we were received, and I think it is only right that I should underline it. From the very beginning and at all stages to the end the Russians really did make us feel very welcome, and did everything they possibly could to ensure our comfort and enjoyment. I was struck with the degree of deference with which Mr. Forshaw and Mr. Bevan were treated. I thought it was most marked in all our meetings with architects. It was perhaps not so much the case when meeting building research workers. I think that it was a recognition of the status of British architecture, as well as an expression of the great importance which the Soviet Union attaches to professional and technical pursuits. There is not the slightest doubt that the greatest possible emphasis is placed by the Russians on technical training.

Another thing that struck me was the great confidence the Russians have in their system and in their future. I am not suggesting that they have not their apprehensions. They have. I think also that they were conscious of the fact that they have made a great many mistakes. We heard a great deal about that in connection with architecture and building. I think they were anxious to learn from their mistakes and to learn from anything which we had to say by way of criticism of what they have done. I think too that they really want to develop technical co-operation with this and other countries.

My particular interest was of course in housing. We have a housing problem in this country, but it is nothing in comparison with the Russian problem. We could not get very comprehensive information about their housing needs, but taking Leningrad for example, since the war they have just about made good their total war damage, and at their present rate of building they will have to go on for another fifteen years before they have one dwelling unit for every family. That is in one city. I cannot make a comparison with Moscow because we were not given so full information there. When you think of the size of the Soviet Union and the housing problem in all the cities, apart from the rural housing problem, especially beyond the Urals, you will appreciate what an enormous task there is in that field alone for years to come. They will need to go on building steadily and increasingly for the whole of the next generation.

They have big plans and big objectives to meet in the industrial field. We saw developments on the Volga by Stalingrad, where they are working on what is the biggest hydro-electric scheme to date, although I gather a bigger one is on the way. Across the river they are building a new town which is about half completed. It is a town for about 60,000 people, so that Stalingrad will be rebuilt and on the east bank there will be a sister city growing up, possibly to the same size. It is obviously intended to be a centre of big industrial development connected with the hydro-electric scheme. The whole prospect is one of enormous industrial and domestic activity, and the Russians have been developing factory methods of building to expand their output which is their single biggest need. They are doing that by sacrificing other things, and that accounts in part for the dullness and monotony of much of their building.

I have no doubt scope for design has been sharply limited by factory production requirements. Units must be produced in that way because it is the most economical way of doing it. The architect is rather left to fit things together and design within the limits set for him. I could not help feeling that the architect was having a rather thin time.

Another thing is that architects felt the need for closer and more effective contact with professional colleagues in other countries. They are very much cut off, and I think that some of the failures in their design and in construction are due to the fact that the Soviet Government has kept itself aloof from the rest of the world. It is the penalty of its isolation. The most encouraging and most useful thing would be if there were a greater exchange not only of journals and periodicals but of architects themselves, so that there would be an opportunity for a direct exchange of experience and ideas.

Mr. W. Allen [*A*], Chief Architect, the Building Research Station, seconding the vote of thanks, said: It is a great pleasure to join in saying on your behalf how very much we appreciate the two addresses which we have been given this evening, and I imagine that all people here will have

Smolny monastery; at present under restoration

different ideas about the various things which have been mentioned.

One which struck me most forcibly was the strong sense of research activity we gained from Mr. Bevan and the fact that that was not reflected in the variety of building methods used in practice. One obtained a clear picture of brickwork done almost as a hand-made aggregate or precast concrete work factory-made without any flexibility to speak of. I should be interested to have any comments which Mr. Bevan would like to make on this curious lack of balance between the research activities, which will be throwing up a number of ideas, and the very simple and rather primitive picture one gets of building methods in the field.

Another thing which must have impressed everybody this evening, and which left me with almost a sense of shock, is the struggle which must have gone on in the minds of architects between the whole idea of research and technical development and the manner of expression which is completely at variance with the whole of the technological background.

There are one or two minor points on which I should like to have some information. One concerns the quality of the precast concrete surface finishes which are used extensively. Do they stain badly or do they craze and do other things which are common to ours? I should be interested to know to what extent architectural work is in the hands of private architects as distinct from the official side. I should also be interested to know whether they do much research on the sociological side, and on costs and economics.

Prefabricated plumbing was mentioned. I remember when we had the Russian visitors at the Building Research Station last summer they were taken round in cars by architect colleagues who were asked about plumbing. One of the Russian visitors, having heard the reply, put his hands on his throat and said 'Ah, just like you, the sanitarians have us by the throat'! I should be interested to know whether they have made any advance on that side at all.

DISCUSSION

Mr. T. Mitchell, M.B.E. [*A*]: The outstanding lesson, it seems to me, that is to be learnt from what we have heard this evening is the importance from the national point of view of the architect making himself and maintaining himself as a leader of the building team.

If Mr. Forshaw and Mr. Bevan could add anything on the subject of heating and of carrying out work under cold conditions, it would seem appropriate!

Professor G. P. Crowden: About twenty years ago I happened to be in Leningrad and I was struck then by the fact that they never seemed to finish off the work. We visited one place and the lady said 'Do not look at the inside as we have not had time to do any decorating', and apparently they are still not doing decorating.

Mr. Forshaw: Before attempting to answer the few questions which have been raised, I should like to say how much I appreciate the attendance of Professor Crowden. I feel guilty in failing to acknowledge the loan of his pictorial maps of Leningrad and Moscow which you saw were taken from a small booklet which Professor Crowden lent to me three or four weeks ago. I also want to thank Mr. Yerbury and Mr. Yorke for the slides of their 1953 tour which I borrowed from the A.A.

With regard to the point made by Mr. Allen concerning private and official architects, the short answer is that the great bulk of the work is in the hands of official architects either working in Ministries for the Government or for the City Soviets; but there are a number of architects, who might be called 'specialists', who are working in an independent way. They work more as consultants for the Ministries, and of course there are specialists on historic buildings and buildings of a special nature or character. In Leningrad we met a Prof. Bakuamlov who had known Walcot very well and who is now in the privileged position of adviser on everything going on in Leningrad, particularly for the preservation of the ancient monuments. The authorities are anxious that the 18th-century Leningrad shall retain its character, and in some ways the main planning pattern and layout succeed but fail badly in architectural treatment.

With regard to heating conditions, double glazing is common practice and of course central heating is general and is developed to a very high degree.

Mr. Bevan: Mr. Allen asked the reasons why the research was not producing the results in new forms of construction. I cannot answer that in one line. I think I know the answer to it, and it may be the outcome of the regime.

As to the question of crazing, there was some crazing, as we find in this country.

I cannot recollect the sociological aspect of research being mentioned. Economics were included. To amplify Mr. Forshaw's remarks, I think that the best thing I can do would be to refer Mr. Mitchell to one of the Post-War Building Studies on district heating where I think there is a fairly extensive account of some of the Russian work on district heating.

With reference to working under cold conditions, we were there in hot conditions and our minds were far from the subject of cold-weather working; but I am reminded of a statement made to the effect that before the war the Russians adopted the principle of casting their concrete work during the winter, allowing it to freeze, and leaving it there until the spring thaw came.

References

1. See *The Moscow Kremlin*, A. Voyce. Thames and Hudson, London 1955. See this JOURNAL, p. 202.
2. *City Planning in Soviet Russia*, M. F. Parkins. The University of Chicago Press. 1953.
3. *Russian Communism*, Nicolas Berdyaev. Bles. 1935.
4. *Peter the Great*, de Grunwald. Douglas Saunders. 1956.

Film Notes

The Film Sub-Committee, in criticising the following films, have reviewed them primarily from the architectural angle; i.e., the assessment has been based on the value which the film is likely to have for an ordinary audience who wish to learn something about. architecture, planning or building.

The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes (35 *mm. and* 16 *mm.*) *are given. Sound films are marked 'sd' and silent 'si'. The running time is given in minutes.*

(*F*) *indicates free distribution.*

Prestressed Concrete

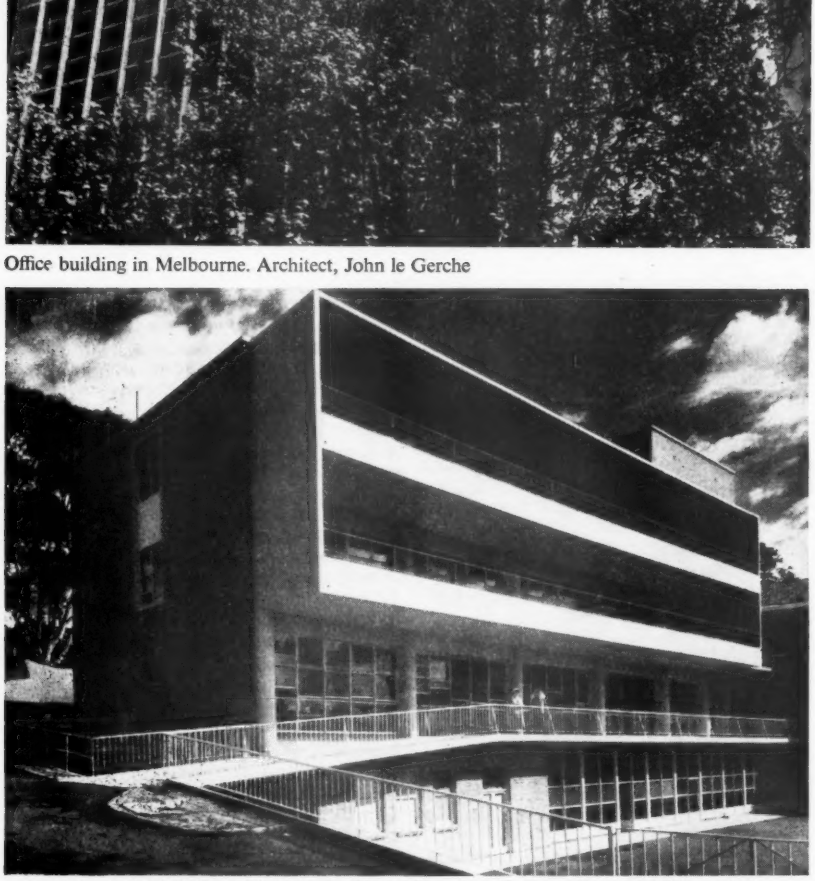
Britain 1954 (F)

Summary. The film opens with a sequence in which animated diagrams are used to analyse the stresses in normal reinforced and in prestressed concrete beams. A series of tests is then shown giving a comparison between the behaviour of normally reinforced and prestressed beams under normal and abnormal loads. Further tests illustrate the effectiveness of the bond achieved between high tension, steel wire and concrete and the necessity of using a high-grade concrete mix. The second half of the film deals with the manufacture of prestressed floor beams in a factory and with their use in actual building construction. Finally the comparative cost of the manufacture and use of normal reinforced and prestressed concrete components is illustrated by an animated chart.

Appraisal. An interesting technical film reaching a high photographic standard. The tests and diagrammatic analyses of stresses in the earlier sequences of the film assume a general knowledge of structural mechanics; their exposition might be clearer. However, the sequences on manufacture and building construction are well photographed, coherent and interesting with a useful commentary.

16 sd. 25 mins. Sound Services Ltd., 269 Kingston Road, London, S.W.19.

Office building in Melbourne. Architect, John le Gerche



Austen Hospital, Heidelberg, Victoria. Architects, Yuncken, Freeman Bros., Griffiths and Simpson

Architecture in Australia

Opening of the Exhibition at the R.I.B.A.

The President first read a telegram from Mr. E. J. A. Weller, President of the Royal Australian Institute of Architects, which said: 'Best wishes for the successful opening of the exhibition of architecture of Australia. Regret unable to be present except in thought.'

He then went on to say his next 'pleasant duty' was to welcome the High Commissioner. He said: We are very happy indeed to have an exhibition of this kind, illustrative of the work being done by our friends and citizens of the Empire, in this building. And we are particularly fortunate in having His Excellency to open it.

Sir Thomas White, K.B.E., D.F.C., V.D., High Commissioner for Australia, said: This is the first Australian architectural exhibition in London and I think the first of any Dominion or Colony. And I want to thank you, Mr. President, you and the members of the Royal Institute of British Architects, for graciously allowing us to use this beautiful building—which is a tribute to your own excellence—and for all the trouble which you and your staff have taken to make the exhibition possible.

It also cost a great deal of trouble in Australia, because these photographs had to be gathered from the distant ends of a very vast land, and it needed a good deal of work and organisation, and of flying, to get them together.

The High Commissioner went on to say that the exhibition was an attempt to give a cross-section of architecture in Australia. It showed the historic, traditional British architecture of the 1800's, its modification to suit climatic conditions, the gold rush period, during which such was the flood of immigration (Australia was encouraging a similar one today) that any kind of building was acceptable, and the wattle, national flower of Australia, which in the South of France was called mimosa, was used for wattling, or binding with mud to build houses; then came the Federation period, and the war and post-war years.

Some of the building Sir Thomas said he thought was rather surprising for so young a country; and it had to be remembered that Australia was a country without any indigenous architecture.

But it was the post-war and contemporary work that was principally exhibited. It was not confined to houses but showed also the advances in the building of public institutions such as hospitals and schools. On the latter something like ninety millions were spent last year (after all, children were encouraged to come to Australia—they were given free passages). And it would be seen how the schools were adapted to climate, from the tropical regions to the

A 'gold rush' cottage at Hill End, New South Wales, 1873

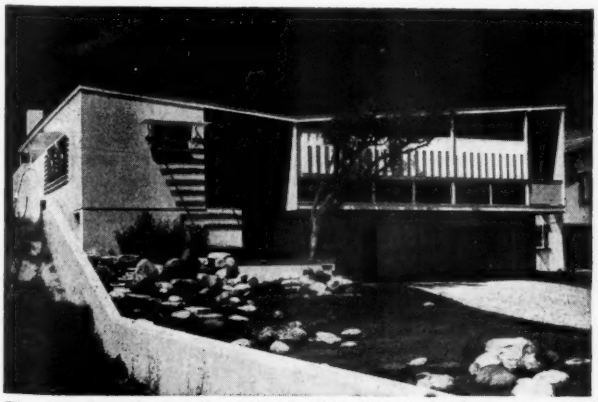
southern parts of the Continent such as Melbourne. There were also the big public works undertakings with which the Australians were trying to conquer some of the disabilities of their country. For although Australia was large on the map, a third of it was useless. The Australians were trying to conquer the desert. They were turning rivers back into the interior for irrigation and power stations. The Snowy Mountain scheme he thought was the most stupendous hydro-electric scheme yet built—it was costing £400,000,000 and had 80 miles of tunnel.

There was also the suburb that was being built to accommodate the athletes in the forthcoming Olympic Games. The sacred Melbourne Cricket Ground had been ploughed up for this purpose, and new swimming baths built. Something of the architecture of this new suburb could be seen in the exhibition.

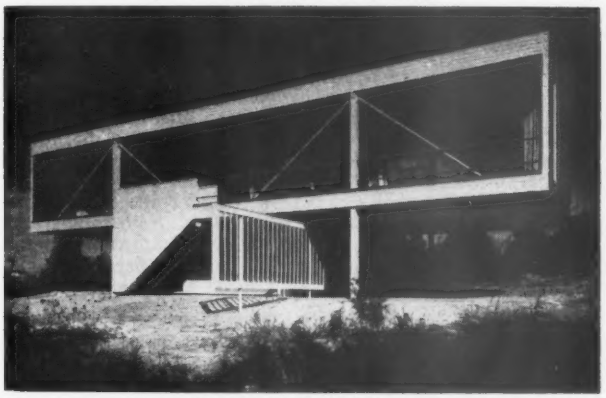
Mr. E. D. Jefferiss Mathews, O.B.E., A.R.I.C.S., Hon. Secretary R.I.B.A., proposing a vote of thanks to Sir Thomas, said: I should like on behalf of the Royal Institute to thank you for coming here to open this exhibition. We have looked forward to having this example of the work you have been doing in Australia in this building for a long time, and now I am sure our expectations of the work we know your great country to be doing will be amply fulfilled. It will be particularly interesting to see your recent work against the background of the older work.

The 'Royal Mint', Sydney, New South Wales. 1811

House at Restrevor Park, South Australia. 1952. Architect, Robert Dickson



House at Broadbeach, Queensland. 1953. Architects, E. J. Hayes and C. R. Scott



House at Turramurra, New South Wales. 1954. Architect, Harry Seidler

Architect, Manufacturer and BS. 1311:1955

The advantages of standard sized trade and technical literature

By Gontran Goulden, T.D. [*A*], Deputy Director, Building Centre

MOST ARCHITECTS maintain files of trade and technical information but the scale on which they do so varies considerably. Some firms have highly organised information offices, complicated filing systems and specialised staff, others collect information for each job as they go along and, partly from fear of becoming out of date, scrap it when the job is finished. It is not the purpose of this article to discuss the merits of these two extreme systems but to examine a problem which is common to both, and to all the other systems in between.

The type of trade literature designed to be read once and thrown away is outside the scope of this article, which is entirely concerned with information to be filed for future use. The architect wants to be able to build up a technical file for use in the drawing office, when writing specifications, and when choosing sub-contractors. This file must be easy to put together, easy to classify and easy to use.

If the file is to comply with these three last requirements the papers in it must be of the same size, and it is an added advantage if they are headed and laid out to the same set of rules. As often as not the best an architect can collect is a bundle of assorted sized papers, some vertical and some horizontal in format, some with and some without binding margins and some folded so as to make filing impossible. This maddening state of affairs could quite easily be avoided if only the industry would adopt the sizes and setting out rules laid down in B.S. 1311 : 1955 *Manufacturers' Trade and Technical Literature*.

Although the Standard bears the date 1955 there is nothing very new about it, for it is in fact a revision of B.S. 1311: 1946 which laid down sizes for trade literature in the building industry. The original B.S. recommended three sizes, the new one recommends two and these are unaltered from the original.

The 1946 and 1955 Standards both recommend the sizes 11 in. by $8\frac{1}{2}$ in. and $8\frac{1}{2}$ in. by $5\frac{1}{2}$ in., the vertical dimension being the greater in each. The size 11 in. by $8\frac{1}{2}$ in., although not in itself a standard paper size, was adopted because it was a size which could be cut from the maximum number of British paper sizes. Here it is necessary to explain that the British paper-making industry is based on a large number of paper sizes, the range of sizes being related to the type of paper with little or no relation between the ranges of size. It was this fact above all which prevented the adoption of the almost universally accepted international standard, known as A4, which is 297 mm. by 210 mm. or approximately $11\frac{3}{4}$ in. by $8\frac{1}{4}$ in., and A5 210 mm. by 148 mm. or approximately $8\frac{1}{4}$ in. by $5\frac{7}{8}$ in.

The 1946 standard had only limited success in the building industry although the Building Centre had in fact been using the largest size as its standard information sheet since 1931. Up to the outbreak of war the Centre was able to insist on its exhibitors providing standardised sheets. Immediately after the war, because of paper and printing difficulties, the restrictions had to be relaxed, and once relaxed it became extremely difficult to tighten them again. At present about half the sheets issued by the Centre are to B.S. size. This, though it cannot be said to represent the position in the industry as a whole, gives some idea of the success of the standard as regards loose sheets. In catalogue production manufacturers appear to be taking more notice and quite a number of first-rate catalogues to B.S. size have appeared in the last few years. Some however have spoiled their volumes by using oversize covers (maximum sizes for binding covers are mentioned in the 1955 standard). A minority of manufacturers have produced elaborate and expensive catalogues in giant sizes too big in each dimension to fit into any ordinary shelf. Such publications are a very great bore.

Experience of the first edition has shown that some British printers are not very particular about trimming to an accurate size and although there are technical difficulties which may prevent absolute accuracy the new standard has reduced tolerances to $\pm\frac{1}{16}$ in.

Before discussing the problem of the enforcement of B.S. 1311 it is interesting to see what has been done in other countries. In Scandinavia, and to a lesser extent in other parts of Europe, the size A4 is used for everything. Trade literature, periodicals, and writing and duplicating paper conform to this universally accepted size and there are no problems. A4 is an exact size and the need for tolerances does not arise. Unlike the Building Centre, the Scandinavian building centres design and produce sheets for their exhibitors and this enables the standard of technical information and layout to be kept at a high level. It also enables the centres to issue the sheets bound in book form.

The complete standardisation of paper size in Scandinavia probably has a good deal to do with the enviable tidiness of architects' bookshelves there. It appears that no campaign was necessary to bring about this admirable state of affairs; it just happened as a part of Scandinavian orderliness.

It was quite different in the United States. Some years ago American architects through the A.I.A. revolted against the wide assortment of sizes of trade literature and the American Institute drew up standard sizes affecting all trade literature, and also devised a filing system for it. Manufacturers were given a certain time to comply with the standards, after which members of the A.I.A. were provided with small adhesive labels which said that since the literature to which they were attached was not to standard size it was being returned to the manufacturer. This bright idea brought immediate and lasting results. If you look at American building trade literature you will find a binding margin and an A.I.A. file reference. If pages are removed from a periodical they will be found to be to A.I.A. standard size.

In the December 1955 issue of the R.I.B.A. JOURNAL Mr. N. Keith Scott [*A*], writing of U.S. office procedure, mentioned Sweet's Catalogue as something new to this country. Sweet's is certainly nearer comprehensiveness than anything published here but there are at least three catalogues of its type. The Architects' Standard Catalogue is however the only one conforming to B.S. size. Large bound catalogues of this kind are undoubtedly useful but not being loose-leafed they cannot be kept up to date. They are expensive to produce and usually appear only in alternate years.

Compliance with standard sizes has been successfully brought about in Scandinavia it seems by common consent and in the United States by the exercise of sanctions after due warning. How are we to enforce our standards?

In the first place the new standard should have the goodwill of a large part of British industry, for more than forty manufacturers' associations were represented on the B.S.I. Committee. Advertising agents were also represented, and a vast amount of technical advertising passes through their hands. If the various member organisations of the committee are true to their representatives' decisions there will be no difficulties, but will the associations' decisions bear much weight when they reach individual firms? We can only hope so.

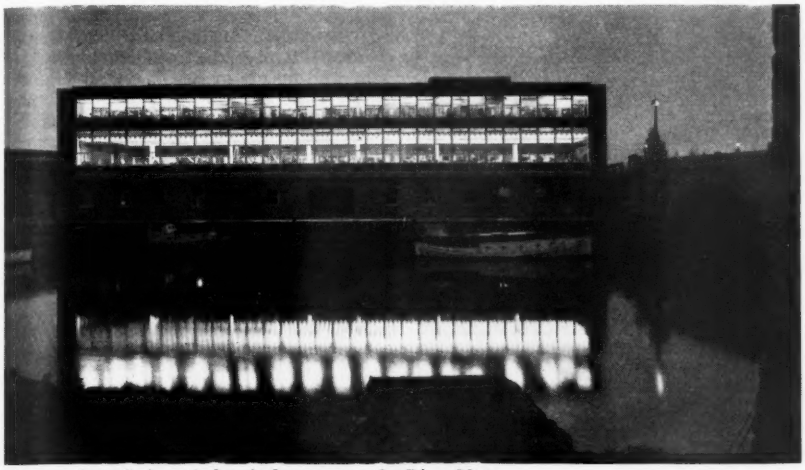
The first step must be to call the attention of all manufacturers in the building industry to the provisions of B.S. 1311 : 1955, pointing out the determination of the R.I.B.A. to see that they are carried out. As an earnest of this the R.I.B.A. is arranging to print and sell to its members postcards bearing an inscription similar to that used by the A.I.A. Members will be doing a great service to the cause if they use these cards. In addition members might, when asking for trade literature through the technical Press, stipulate that only that which is to B.S. size will be acceptable.

The Building Centre, as perhaps the oldest and largest user of the standard, is happy to collaborate in the campaign and proposes, in addition to tightening up its own regulations, to put on a small exhibition of well-produced standard trade literature.

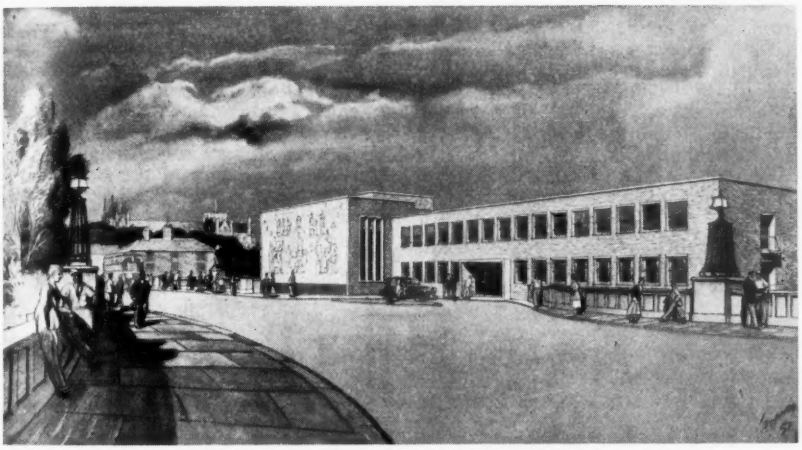
Office Building at Peterborough

For the Mitchell Engineering Co. Ltd.

Architects: Howard V. Lobb and Partners (Howard V. Lobb, C.B.E. [*F*], and J. C. Ratcliff, O.B.E. [*F*])



The curtain walled north façade from across the River Nene



Perspective of the street façade. The sculptured panel is not yet finished

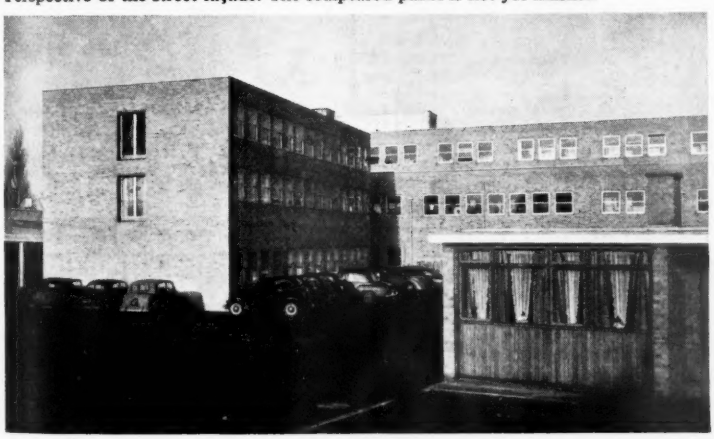
THIS BUILDING—the new headquarters office of a large organisation of civil engineering and public works contractors—is on the main approach to the city of Peterborough where it crosses the River Nene. There is a view of the cathedral and the ancient Customs House is opposite. With these facts in mind, the architects have kept the building low in height and simple in form, the façades being faced with brick and having aluminium sash windows on the street front. In all this there was close consultation with the City Planning Officer.

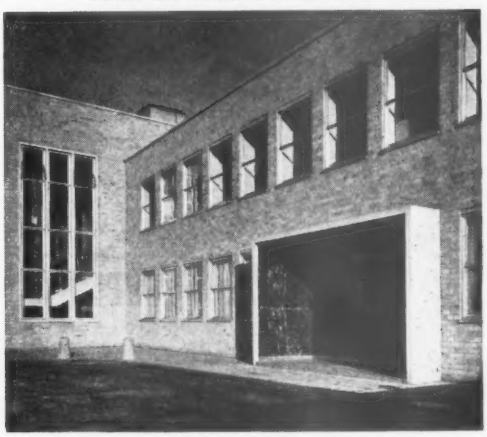
Perhaps the most outstanding feature is an exceptionally large drawing office which (in common with the remainder of the building) is air-conditioned, receives its daylight through double glazing in a curtain wall, is acoustically treated and in which continuous, shadowless artificial lighting is automatically controlled by photo-electric cells on the roof in order to maintain, with the daylighting, a constant high level of illumination.

It might be thought that a drawing office which is 150 ft. by 35 ft. would be noisy and distracting to its numerous occupants, resulting in a lowering of efficiency. The reverse is the case. The drawing staff appear unanimously to like it and the management report an increased output of drawings with a reduction in errors. The acoustic treatment is so effective that telephone conversations and discussions round drawing boards create no disturbance at distances greater than a dozen feet or so. This treatment consists of thick glass fibre quilt backing of the perforated light reflectors which cover the whole ceiling and by cork flooring. The double glazing excludes any distracting external noise.

The continuous lighting troughs form a suspended ceiling and are so shaped (see section on p. 195) that the lighting tubes are not seen by a draughtsman looking up from his board. The intensity is 110 foot-candles on the working plane and the light is entirely shadowless; a fact which the JOURNAL representative proved by personal experiment. The scheme was designed for 80 foot-candles which is known to be sufficient, the present extra intensity allow-

Bottom left, the yard. Below, the main entrance. The windows are aluminium sashes





The drawing office is air-conditioned, has double glazing and continuous tubular lighting over the ceiling which is also an acoustic absorbent and panel warmer

ing for some inevitable drop towards the end of the life of the tubes and slight darkening of reflecting surfaces. The tubes are in three rows, each 10 ft. long, the two inner rows being cold cathode and the outer one (next the window) hot cathode. The photo-electric cells on the roof are arranged to control each series separately so that, as daylight fails, the innermost series is switched on first, the others following in turn. The light reaching each drawing board arrives at angles which greatly diminish shine and reflection from the paper. The installation was by the General Electric Co. Ltd. The perforated reflector ceilings were manufactured and erected by Frenger Ceilings Ltd.

The drawing office window faces due north so that no sun enters except during the summer early and late in the day when the office is not in use. There is no perceptible down-draught from the double glazing.

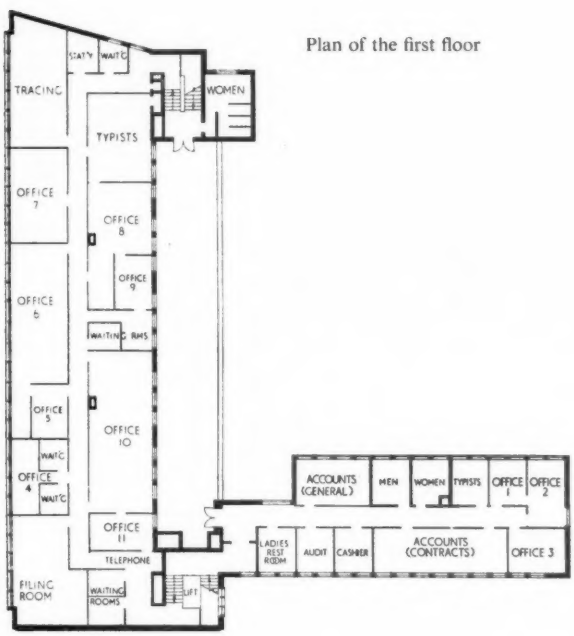
The air-conditioning has greatly reduced the amount of dirt which as every architect knows tends to accumulate on drawings, though boards are covered at night when the floor is being swept. It also gives an entire absence of draughts and avoids the nuisance of papers blowing about from open windows. The pleasant character of the room as a place in which to work is enhanced by the agreeable colour scheme, which includes warm red coloured end walls, and by the clear view across the River Nene through the continuous band of plate glass windows which, because of the double glazing, do not 'steam up'.

The building is planned more or less round the drawing office. At one side of it are the offices of the senior technical officers, subdivided by glazed demountable partitioning. There is a wastepaper chute to the basement and a push-button lift for transferring material to the print and photostat rooms and drawing store below and to the typists, tracers and general office above. At one end of the main block are a staircase and staff lavatories and at the other the main stair and lift. The staff enter at the lower ground floor from either a cycle park under the main approach or from the car park in the yard.

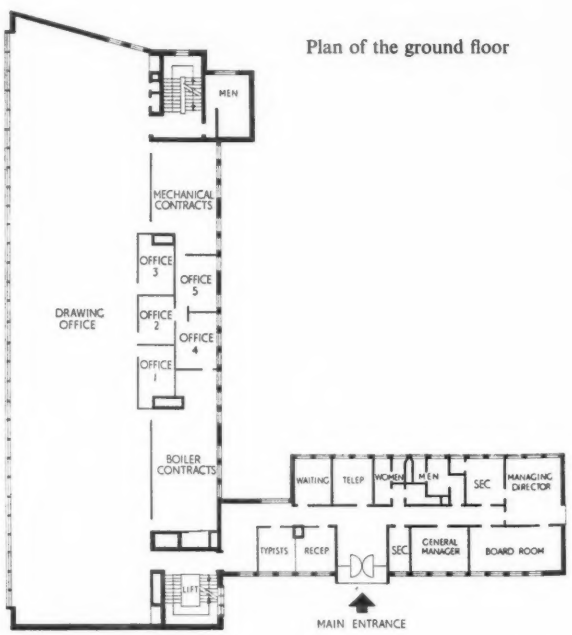
Above the drawing office is a storey of ordinary office accommodation with sub-divisions of demountable partitioning. Below is a floor mainly devoted to storage, lockers, records and the heating and air conditioning plant, which is oil-fired.

The main entrance is in a wing facing the street which, because of the bridge over the River Nene, is at a higher level than the site. This wing houses the senior directorate

Plan of the first floor



Plan of the ground floor

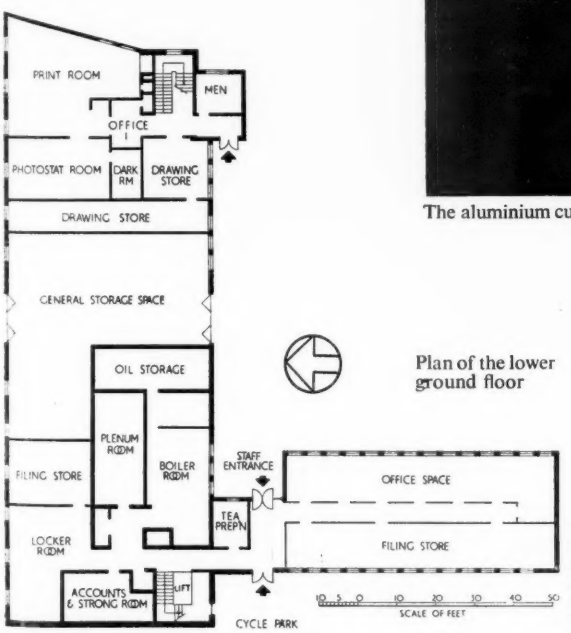


and secretarial staff. Entry is at mid-level on which are the directors' and general manager's offices, reception, telephone switchboard, etc. The floor above the wing mainly accommodates the accounts department and the floor below a filing store and spare office space. The filing store has rolling storage racks which permit the fullest use of space. The strong-room for important records is of full fire-resisting construction with steel door and is ventilated (to prevent condensation) through a grille which a fusible link automatically closes in the event of an outbreak of fire. The telephone room contains an Isophone, a recording machine which is switched into the telephone system when the operator leaves at night, and to which engineers working on contracts can telephone reports after the office has closed.

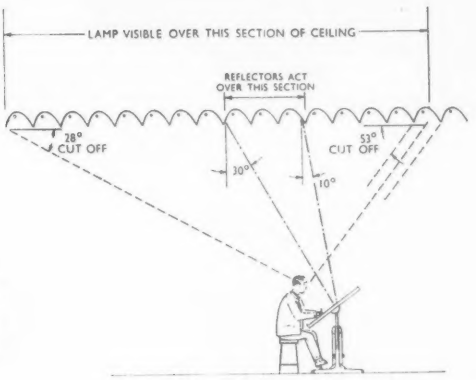
In addition to the air-conditioning system, warmth is supplied to all offices by pipes embedded in ceilings. Heating pipes also form the main frame of the suspended ceiling of the large drawing office so that this ceiling, in addition to being a light reflector and an acoustic absorbent, is also a warming panel. Hot water supply in the summer is by means of a gas boiler. Both the oil-fired and the gas-fired boilers are controlled by time switches. There is an under-floor ducting system throughout the building for electric and telephone wiring.

The foundations, being alongside the river, were piled. For speed of erection a steel frame was used with reinforced concrete floors. The external facings are of a mellow Loughborough brick, the panels of the north curtain wall being riven Westmorland grey-green slate. The windows and curtain wall framing are aluminium. On the blank end wall of the main block facing the street a great sculptured mural is being

The aluminium curtain wall on the north side. The panels are grey-green riven Westmorland slate



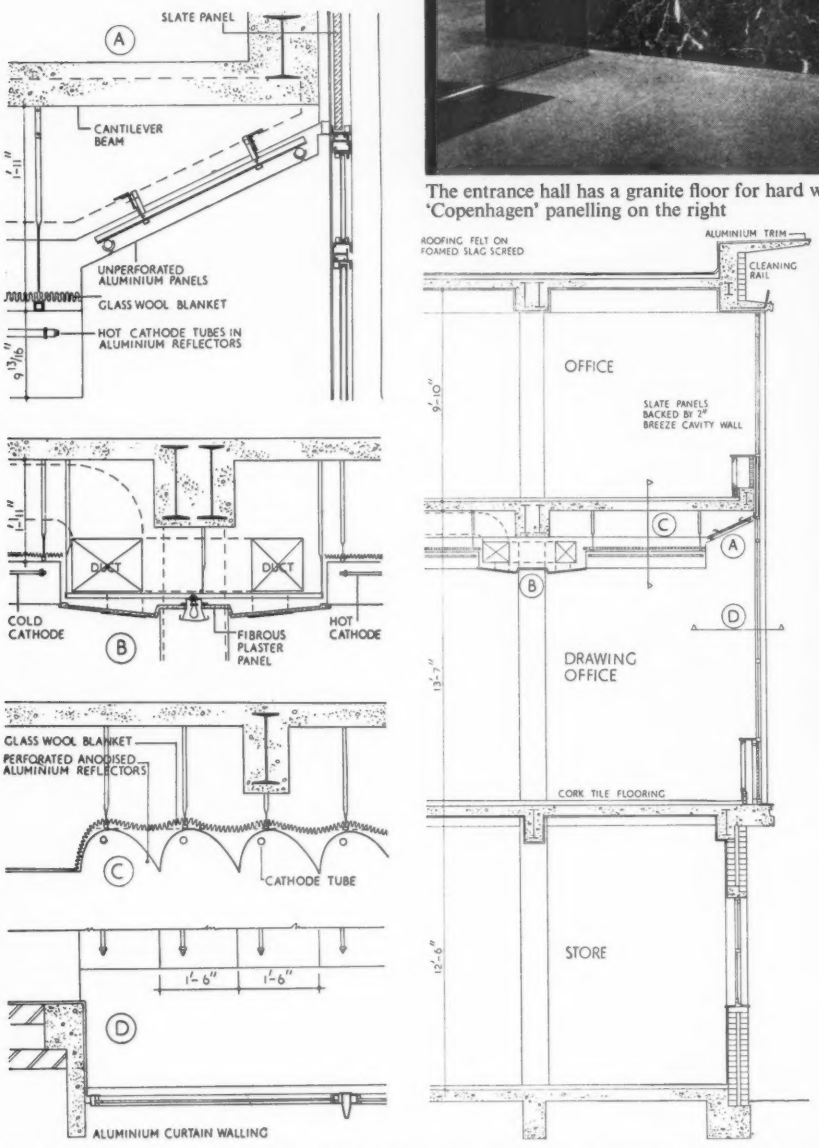
Plan of the lower ground floor



Diagrammatic section of the lighting in the drawing office. It is shadowless and free from reflection from the paper

carved. This is the work of Mr. Arthur J. Ayres whose design was placed first in a competition limited to seven sculptors. Arranged round a central group of three figures depicting Administration, Design and Works are various historical and mythical figures including Archimedes, Minerva and Isaac Newton. The material is Portland stone. The board room, which is also used as an office by the chairman, is panelled in coco wood with black bean furniture and black leather unholstery. The lighting is a mixture of indirect fluorescent tubes and shaded direct incandescent lamps. At one end of the room is a screen for pinning up drawings formed of a wall

The entrance hall has a granite floor for hard wear but acoustic absorption is provided by slotted 'Copenhagen' panelling on the right



Details of the construction. On the right a section through the north front and, left, enlarged details of portions A, B, C and D. The drawing office ceiling, which acts as a continuous light source and acoustic absorbent; sections are demountable for access

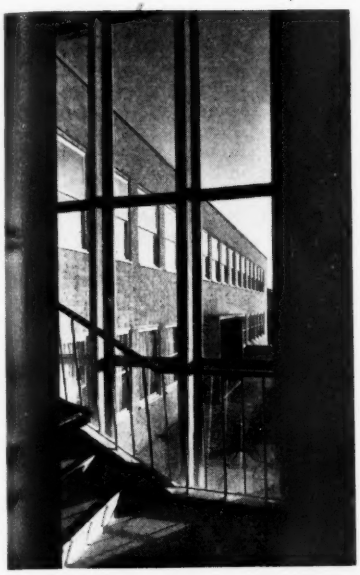
A tiled mural in grey blue and oatmeal colour by Nicholas Vergette

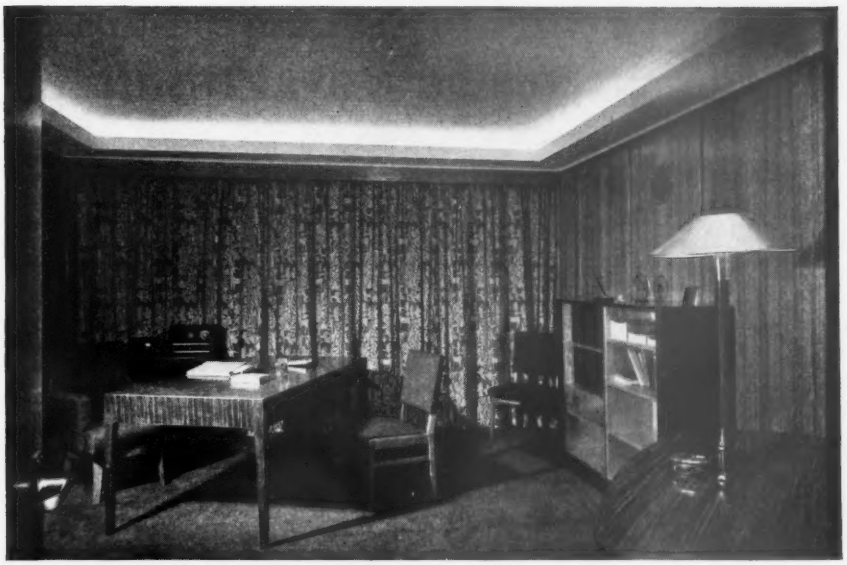
panel and doors; these are held closed by a simple magnetic catch and can be pulled open and folded back to provide two side pin-up screens. A projector screen can be pulled down from the ceiling. The curtains are lime yellow, black and brown.

The managing director's office is also panelled in coco wood with black bean furniture. It has fluorescent cornice lighting and incandescent standard and table lamps.

The architects' assistants were Mr. K. A. Day and Ian C. Brown [*A*]. The consulting civil engineer was Mr. Walter C. Andrews, B.Sc.

The building was erected by Mitchell Construction Co. Ltd., a subsidiary of Mitchell Engineering Ltd.





Left, the main staircase window. Above, the managing director's office which is panelled in coco wood with furniture of black bean

Below, the shadowless lighting in the drawing office. Left, the board room, panelled in coco wood and with black bean furniture, has a mixture of fluorescent and incandescent lighting

Financial Position of the Royal Institute

THE COUNCIL have carried out a review of the financial position and in this connection had before them detailed estimates of income and expenditure for the year 1956 and an outline estimate for the year 1957. It was clear that through the substantial increase in the cost of all services (e.g., postage and printing charges on the JOURNAL and Kalendar alone will increase in cost by £8,000 per year), the Institute's revenue will fall behind expenditure in 1956 without making provision for any of the increased activities on behalf of members which have already been approved by the Council or which are forecast in response to the desire expressed by the general body of members at the Annual General Meeting in 1955. It was agreed that some savings and additions to revenue other than from subscriptions would be effected in 1957 but it was clear that the total of these would not suffice to balance the accounts in either of the two years under consideration. The Council then considered the rates of membership subscription in relation both to the fall in the value of money since the war and to the rates currently in force for other comparable institutions. In this connection they also had in mind the desire expressed by the Allied Societies' Conference for an increase in the financial assistance made to Allied Societies, especially to those of smaller size and not based on urban areas. It was clear that no such assistance could be given without a comparable increase in revenue.

Having regard to all the circumstances it was agreed that notice should be given that with effect from 1 January 1957 membership subscriptions would be increased so as to stand at the following rates:—

(*a*) In the United Kingdom and Republic of Ireland

Fellows	£10 10 0
Associates	£6 6 0
Licentiates	£6 6 0
Students' Annual Contribution ..	£2 2 0

(*b*) R.I.B.A. Members in the Transoceanic Dominions who are also members of Allied Societies in those Dominions

Fellows	£6 6 0
Associates	£4 14 6
Licentiates	£4 14 6

(*c*) Members resident abroad outside the area covered by the Allied Societies

Fellows	£6 6 0
Associates	£4 14 6
Licentiates	£4 14 6

(*d*) Students R.I.B.A. resident overseas

Students elected after 1 January 1953 ..	£2 2 0
Students elected before 1 January 1953 ..	No contribution for first 5 years, thereafter £2 2 0

(*e*) Retired Members and Subscribers

Retired Members ..	£1 1 0 } No
Subscribers	£1 1 0 } change

These rates are calculated to restore the income and expenditure account to balance by the end of 1957.

The Council also felt that it would be desirable to budget for reasonable surpluses of income over expenditure in order to finance the completion of the R.I.B.A. building as quickly as possible. The rebuilding of No. 68 Portland Place, although providing for more convenient planning, will do very little to increase the floor area over that now available and the building of the upper storeys of No. 66 is urgently required to provide the necessary accommodation for both the existing staff and the new staff whose appointment has recently been approved by the Council.

If the necessary financial provision is not forthcoming from the margin of ordinary income, the Institute would be faced with the alternatives of not completing the building and accordingly having to rent additional accommodation outside at considerable expense, or completing the building and making provision by raising a mortgage to pay for the operation, which would involve the payment of high interest charges.

Practice Notes

Edited by Charles Woodward [*A*]

IN PARLIAMENT.—Frost-Proof Plumbing. Lord Wolverton: My Lords, on behalf of my noble friend Lord Teynham, who unfortunately is ill, I beg to ask the Question standing in his name on the Order Paper.

To ask Her Majesty's Government what directions, if any, they have given, or intend to give, to local authorities to ensure that houses and schools should be constructed so that their plumbing is frost-proof.

The Secretary of State for Commonwealth Relations (The Earl of Home): My Lords, I am sorry to hear that my noble friend Lord Teynham is ill. The Answer to his Question is as follows:

With regard to houses, Her Majesty's Government have issued advice in the *Housing Manual*, 1949; in Appendix G of the Technical Appendices to the *Manual*, which were issued in 1951; and in the Circular No. 34/54 which was issued in April, 1954. Local authorities also have the benefit of two publications issued by the Ministry of Works—*Postwar Building Studies No.* 4, issued in 1944; and an advisory leaflet on lagging, issued in 1950. The Ministry of Housing and Local Government is considering whether any further action can usefully be taken. With regard to schools, the Minister of Education has not given, and does not propose to give, any directions to local education authorities on matters within the competence of their own professional and technical staffs. The position in Scotland is similar. (9 February 1956.)

EDUCATION. Architecture and Building (Modular Co-ordination). Sir A. Bossom asked the Minister of Education to draw the attention of the various institutions under his control giving technical instruction on architecture and building to the saving resulting from the use of modular co-ordination both in cost and in time of production of drawings and buildings; and if he will arrange that lectures should be given on this subject.

Sir D. Eccles: I am aware that a number of architects, including my Department's Development Group, have used such methods with success. The underlying theory is being studied in several of the leading schools of architecture and other research establishments, but it has not in my view developed to the point where it can profitably be included in the syllabus of building courses generally. While researches are continuing, I hope that teachers of architecture and building will keep themselves abreast of developments in this field and I welcome the publicity which is being given to this topic by the Royal Institute of British Architects, the British Standards Institution, the Building Research Station of the Department of Scientific and Industrial Research and the Modular Society. (21 February 1956.)

Building Design (Modular Co-ordination). Sir A. Bossom asked the Minister of Housing and Local Government, in view of the savings that can result from the use of modular co-ordination in the laying out of and the construction of buildings, if he will circularise all local authorities asking them to give consideration to the application of this science, which is being so actively considered and applied in many European countries as well as in the United States of America.

Mr. Sandys: I am carefully watching this development. As soon as methods applicable to this country have been evolved I shall consider the advice to be given to local authorities. (22 February 1956.)

Research. Houses (Insulation). Mr. Hastings asked the Parliamentary Secretary to the Ministry of Works, as representing the Lord President of the Council, what

estimate has been made by his research department of the increased cost to an ordinary three-bedroomed house if double windows were provided and the ceilings of the upper storey rooms insulated by glass wool; and what would be the approximate saving in fuel expressed as tons of coal per year that would result from this.

Mr. Bevins: The provision of double windows would probably cost between £25 and £100 and the insulation of the bedroom ceilings by glass wool £6–£7. The resulting yearly savings in fuel could be as much as a quarter and half a ton of coal respectively, if heat comfort remained unchanged, though experience shows that improved insulation usually results in greater comfort rather than in the saving of fuel. (22 February 1956.)

MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Restriction of Capital Expenditure. Circular 10/56 dated 17 February states that with the exception of housing and school building, other local government services will be severely restricted as regards loan sanctions for at least six months. Major works on roads may not be affected. During the six months' period there will be a virtual embargo on all new capital projects or expansions of existing schemes which can be deferred without risk to health or safety or other vital interests. The restrictions will be applied to all capital expenditure which has not already received loan sanction.

Rating and precepting authorities are asked to estimate the probable effect of these restrictions upon their forthcoming expenditure and to make any consequential reductions in their rate demands for the year 1956–57.

Circular 11/56 dated 17 February refers to the restriction of capital expenditure on water, sewerage and sewage disposal, refuse disposal, coast protection, burial grounds and crematoria, except where risk to health, safety or other vital interests renders it impracticable. In respect of other services within his sphere of responsibility, the Minister does not propose for the time being, except in cases of special urgency, to authorise any new loans for capital expenditure whatsoever.

LONDON COUNTY COUNCIL. (General Powers) Act 1955. This act, which received the Royal Assent on 21 December 1955, makes amendments to the London Building Acts of 1930 and 1939. Section 4 repeals the definition of 'sky sign' in section 5 of the Act of 1930, and also Part VIII of the Act of 1939 which refers to sky signs. Sub-section (6) of section 104, sub-section (2) of section 148 and sub-section (3) of section 148 are repealed as far as they refer to sky signs. Section 18 in the Act of 1952 relating to flag advertisements is also repealed. (*Note.* The L.C.C. will presumably use their powers under the Town and Country Planning Act 1947.)

Section 10 of the Act of 1955 revises the fees payable to the L.C.C. in respect of Dangerous Structures as set out in Parts I and II of the First Schedule. The fees payable to the L.C.C. in respect of the services rendered by the District Surveyor as set out in Part I of the second schedule of the Act of 1939 are also revised as set out in the Second Schedule of the Act of 1955.

Section 12 of the Act of 1955 provides that the first time that calculations with respect to a building structure or work under the London Building Acts and bye-laws are submitted to a District Surveyor, one-third of the fees which would become payable to the L.C.C. if the building structure was erected or work carried out shall become due to the L.C.C. For this purpose the cost upon which fees are calculated is to be the reasonable cost.

The revision of fees referred to in section 10 of the Act of 1955 would have been simplified if the whole of the First and Second Schedules of the Act of 1939 had been repealed and replaced in the Act of 1955. As the Acts now stand, some parts of the Second Schedule of the Act of 1939 have been left in that Act and other parts replaced in the Act of 1955.

In the result it will be found that the First Schedule of the Act of 1939 can be struck out, together with portions of Part I of the Second Schedule, the whole of Part II of the Second Schedule and two lines of Part III of the Second Schedule. Part IV of the Second Schedule has been left intact!

LONDON MASTER BUILDERS ASSOCIATION. Tenderers' Declaration. In order that there should be uniformity in Declarations by Tenderers, the L.M.B.A. have recommended the use of the following form by their members. It is to be noted that it is in the terms issued by the Ministry of Works and recommended by the Ministry of Housing and Local Government to Local Authorities.

LONDON MASTER BUILDERS ASSOCIATION
Tenderers' Declaration

To .....

I/We hereby declare that I/We do not:—

(*a*) *communicate to a person other than the person calling for tenders for the construction of a building the amount of any proposed tender for such construction in accordance with any agreement or arrangement so to communicate:*

(*b*) *adjust the amount of any proposed tender for the construction of a building in accordance with any agreement or arrangement between the proposed tenderer and any person other than the person calling for tenders for such construction.*

Name of Firm .....

Signed .....

Address .....

Date .....

This Form of Declaration incorporates the terms issued by the Ministry of Works and recommended by the Ministry of Housing and Local Government in their circular to Local Authorities No. 32/55, *and is recommended by the London Master Builders Association for use by their members.*

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS. Fees for Valuation. In the Institution's Journal for February it is stated that where an additional sum is payable under section 35 of the Town and Country Planning Act 1954 the Treasury recommend acquiring authorities to make a contribution towards the surveyor's fees incurred by the claimant in connection with the ascertainment of the additional sum under section 35. This contribution is on the same basis as that which applies in cases under Parts I, II and V of the Act, subject however to the aggregate contribution not exceeding that which would be arrived at by applying Scale 5 to the total amount of compensation. The arrangement came into operation towards the end of 1955 and is not retrospective.

PLANNING APPEAL. Cesspool drainage. A Borough Council refused planning permission for fifteen detached houses and garages, each with cesspool drainage. In allowing an appeal by the applicant, the Minister took the view that the question of drainage which gave the Council concern in this case is a matter for control under specific powers which exist for such purposes rather than under the Town and Country Planning Act 1947. In the absence of any other objection to the proposed development on planning grounds the appeal was allowed. (JOURNAL OF PLANNING AND PROPERTY LAW, March 1956.)

STABILISATION OF PRICES. The following announcements are made in respect of joinery and salt-glazed pipes.

'The Council of The English Joinery Manufacturers' Association—which is not a price-fixing association—has unanimously expressed the opinion that, provided wages remain constant, there is no reason to anticipate any rise in the cost of housing joinery during the current year.

'In January 1955 they recommended their members to quote firm prices, subject to acceptance within 30 days and delivery within 6 months and also subject to any nationally agreed wages variations.'

'It is announced that the great majority of manufacturers of salt-glazed pipes covering the Midlands and the Southern Counties of England have agreed to keep their prices in these areas at existing levels until 30 June 1956 at least.

'They wish to take part in the general move to stem inflation, and to contribute to stability in the cost of building and road construction.'

'It is announced by the Northern Pipe Association that their members have

agreed to keep their prices for deliveries of salt-glazed pipes in England and Wales at existing levels until 30 June 1956 at least.

'They wish to take part in the general move to stem inflation, and to contribute to stability in the cost of building and road construction.'

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS. The following is an extract from a speech made by Mr. Nigel Hannen, of London, President of the National Federation of Building Trades Employers, at the annual general meeting of the Midland Federation of Building Trades Employers held at the Midland Hotel, Birmingham, on 27 February.

'In these times of financial stringency, when builders are finding it no less difficult than others in industry generally to arrange credit facilities with their banks, it is more than ever important that accounts for building work that has been carried out should be agreed and paid promptly. A large proportion of the money owed to builders by their clients—the total is at least £100m.—is due from local authorities, who often delay settlement for 12 months or more. It is unfair to expect building firms to carry this burden at any time, but now that the credit squeeze is operating and it is becoming increasingly difficult to finance new contracts, I earnestly hope that all our clients—private and official—will collaborate by making payment within the period named in the contract.'

Correspondence

The Editor

REGISTRATION

Sir,—As this year will mark the quarter of a century since the Registration Act was passed, it may interest your younger readers, and even some of the older ones, to be reminded of the achievement of the R.I.B.A. in 1931. In that year Sir Thomas Moore, an Hon. Associate, was fortunate in the ballot for Private members' bills and he introduced our Registration Bill. After a long and difficult fight in which he displayed the utmost tact and skill he got the Bill through just in time, though it was a narrow shave in the end. The whole profession owes him an eternal debt of gratitude, to say nothing of the debt we owed to Harry Barnes, without whose shrewd leadership and political skill we could never have managed it.

For the success of the Amending Bill in 1938 we are similarly indebted to Sir Alfred Bossom whose qualifications as architect and Member of Parliament were quite invaluable.

Yours truly,

IAN MACALISTER [*HON. A*]

SALARIED EMPLOYMENT AND THE STRUCTURE OF THE PROFESSION

Sir,—Congratulations to the Ad Hoc Committee and the Salaried and Official Architects Committee; it appears that the latter has not been as inactive as we thought.

The Committee has become aware that the dissatisfaction among salaried architects is merely a symptom of a larger problem facing the profession as a whole, but the larger problem is also the fault of the profession as a whole.

The reasons for the post-war growth of public authorities' architectural departments are by now well known. One of these reasons is that it is felt that a large-scale long-term building programme can be more efficiently and more economically carried out by a permanent department than by farming out the work in sections to existing private practitioners. (This question is open to debate.)

However, the operative word is 'economically'. Chief officers when assuring their committees and councils that their departments are being run economically have only one proof—a comparison with the R.I.B.A. scale of fees—and the more favourable the comparison, the better the committee like it. It follows therefore that with 60 per cent of the profession in salaried employment, 60 per cent or more of the building work controlled by architects in the country is being carried out at a scale of fees much lower than the R.I.B.A. scale, thus reducing the total income and status of the profession as a whole.

The remedy to this situation is in the hands of the profession without resort to trade unions or alteration to the charter and bye-laws, *but* it is a remedy which must be faced by private practitioners and official architects together for the good of the profession as a whole.

A general move from public authorities to private practice is *possible* with the present full employment situation and assuming that such a move would bring with it more commissions from public authorities to private practitioners. This is not really a practicable proposition, however, for two reasons.

1. Faced with a shortage of qualified assistants, public authorities are perfectly entitled to, and probably would, employ unqualified assistants or enlist the help of other professions.

2. Many assistants moved from private to public offices after the war, attracted by the then better salaries offered, and are loath to move back into private practice because of uncertainty regarding salaries, superannuation or past experiences.

These difficulties can be alleviated as already suggested by the S. and O. A. Committee.

1. A strong and continuous pressure, backed by a full publicity campaign, to attain a legal recognition for the architect comparable with the medical and legal professions.

2. A published scale of salaries and conditions of employment for assistants in private practice.

3. Contact with public authorities to recognise the services rendered by an architectural department and the proper cost thereof. (The Ad Hoc Committee stated that it was not the scale of salaries that was wrong but the application of the scale.)

4. Contact with other professions to discover if they have the same problems with salaried members, and if so the possibility of presenting a unified front to public authorities from all professional grades.

Yours faithfully,

J. B. PILKINGTON [*A*]

THE IMPERIAL INSTITUTE

Sir,—May I, as a partner for many years with Mr. T. E. Collcutt, be allowed, through the medium of the JOURNAL, to express the horror I feel at the proposal to destroy the most important architectural expression this great architect created—The Imperial Institute—which was erected to celebrate Queen Victoria's Jubilee. If this is allowed to happen, it will be a form of vandalism that will shock the whole artistic world.

I was articled to Mr. Collcutt a few years after he completed his great work and remained with him until he retired. Through so long an association I know how he valued the opportunity of giving his best with a spiritual value which great art always contains.

Were he here now and I could tell him of the present proposal, I can hear him say: 'Damn it, my boy, what has happened? Do you mean to tell me that there is not sufficient influence among my old friends, and indeed the public, to demand a full inquiry before the building is destroyed for ever? The very stones in the building I created, which contains my whole spirit, would cry out "Halt! Must expediency take the place of inspiration?" Who is it who says the building cannot be incorporated in a new scheme of such magnitude? How I wish that I were with you now to show the authorities how it could be done!'

It has been said that if the Ministry of Education have chosen the site as being the most suitable for their purpose, is it possible the architect has not been given a free hand so to compose his buildings as to include this national building in his composition?

It has also been stated that the internal planning of the building would not be suitable for educational purposes. As a matter of fact, when all the internal partitions are removed there will be large areas of open floor space, and in addition an impressive entrance hall, staircase and assembly hall.

Surely such a building could fulfil useful administrative purposes somewhere in such a vast scheme. From my own knowledge of the plan and construction as originally carried out, the removal of all extensions and subsidiary buildings added after the building was completed would reduce the actual site area of the remaining structure, and surely make it possible for it to be retained.

All practising architects, in dealing with large schemes, particularly those relating to educational and scientific buildings, realise

that as time passes, changes in planning and construction are inevitable. It might easily be that whatever is designed for present-day use would be continually altered and added to, and in the end probably change the entire appearance and grouping of the several units. Is it therefore not an advantage to have one important building which would be permanent, with its lovely tower as a dominant feature?

Is it already too late for Government action to be taken and so save a building in an area which has so many large and varied buildings of national importance?

'Where none admire, 'tis useless to excel.'

Yours faithfully,

STANLEY HAMP [*F*]

BROMPTON: LONDON'S ART QUARTER

SIR,—Like Mr. Goodhart-Rendel my spiritual home or native heath is South Kensington, bathed as it is in the romantic glow with which memory invests the scenes of one's early twenties. I think it was as much the contents of the buildings that endeared the quarter to us as the buildings themselves, but these were all exciting.

From such a background and to preserve it, in 1914 I and my companions such as Alick George Horsnell besieged the recruiting office, which was romantic of us; and in the case of Horsnell, from our point of view, infinitely unfortunate.

Students of the new colleges of technology and art that are arising cannot, I think, care much who comes into possession of these buildings, or less, if the whole issue is deatomised. There will be no Horsnells to deplore.

Apart from these universal reflections we ask ourselves particularly is the modern architect wise to debunk the art of architecture and to make mechanical efficiency his only end? Is he not losing the confidence and interest of his public and will he not shortly lose his *raison d'être* and leave the structural engineer in sole possession?

Are a ferro-concrete frame, wall panels and flat roofs so greatly economical? Are vast sheets of glass so highly efficient? We doubt it. In any case art is an extravagance to be encouraged and we would suffer, within reason, to be beautiful gladly.

Yours sincerely,

LAWRENCE DALE [*F*]

ARCHITECTURE IN THE U.S.A.

Sir,—An article written by Mr. N. Keith Scott on American architectural practice appeared in your December issue; I am troubling to give an answer because I feel that its impress reinforces an unhealthy tendency among British professionals.

The tendency I have felt is that of discounting the excellence of foreign work. Mr. Scott leaves the impression that British architects have little to learn from Americans other than techniques. The issue involved here directly concerns the British people, and the architectural profession will have done them a disservice if the impression remains.

You will recall that Mr. Scott gives some credit to Americans of foreign background but implies that their work is not American architecture, and he states that the native product is primarily derivative. While it is true that many of America's great architects were foreign born, no one can claim that the work they do there is foreign. It belongs to America as completely as the work done by first or second generation 'foreigners', and if it has merit it will be studied and emulated to the same degree.

It is unfortunate that Mr. Scott found so little original work on his travels, but lack of time and of proper guidance would undoubtedly account for this. I do feel that much of what he did see he failed to understand. The textural beauty of weathered cedar and redwood, worn and decrepit to Mr. Scott, seems as right to me as a Cotswold cottage.

My own experience to date leads me to believe that, with or without Mr. Wright, American architecture is very often great and should be studied and reported upon by this nation's architects in word and work. Not to make this effort is to lose a real opportunity to enrich British life.

Very truly yours,

CLEON M. ARNOLD

EDITOR'S NOTE.—We showed Mr. Arnold's letter to Mr. N. Keith Scott and he has replied as follows:

'It is, of course, difficult for an architect who has studied at M.I.T. and spent the last two years travelling widely through the U.S.A. to avoid rising to the taunt that his efforts have lacked guidance, that he has had insufficient time to come to some mature assessment of what he saw and that he has failed to understand "American" architecture.

'However, I will restrict a brief reply to Mr. Arnold's comments on the nature of American architecture. His third paragraph in which he deals with this subject is a complete enigma to me. Can he tell us what "American architecture" is—whether done by European-born Americans or descendants of the *Mayflower*? Does Saarinen's auditorium, Gropius' Harvard dormitories, Aalto's Baker House or Mies' I.I.T. belong any more exclusively to the U.S.A. than to Europe? Consider 100 per cent American designers: can he tell us just what is particularly American about the work of Wurster, Becket, Rudolf and Johnson, to name only four nationally famous architects?

'Perhaps we differ on fundamental definitions as to what constitutes great architecture. Mr. Arnold says that it is "very often great" but he has avoided quoting examples and names with which to clarify his arguments; there is, therefore, little more that I can usefully add on this point.

'I agree most heartily that American architecture should be consistently studied and fully reported upon, and I think that if Mr. Arnold will read my article more carefully he will see that I name several buildings in which original thought is quite discernible. My only point, to which I must stick in the absence of evidence to the contrary, is that most of it appears to be the work of European-trained men. A last point is that I do not of course level any criticism at all at the use of redwood in its native state but at its frequent insensitive use and inadequate detailing, which fails to bring the best out of this lovely wood.'

DICTIONARY OF ENGLISH ARCHITECTS

SIR,—I have read with interest the letters from Mr. Gotch and Professor Cordingley about George Nicholson's work at Durham. Whatever the truth about the Prebends' Bridge may be—and I am still inclined to believe the contemporary writers who say that Nicholson designed it—there can be no doubt that he was more than a mere mason. In 1780 he made a design for rebuilding the church of St. Mary the Less, Durham, which was published by Mr. C. W. Gibby in the *Transactions of the Architectural and Archaeological Society of Durham and Northumberland*, Vol. X (iii), 1950. Though not a design of great distinction, it is one which no eighteenth-century architect would have been ashamed of, and shows that Nicholson could use his pencil as well as his trowel. I regret that I overlooked Mr. Gibby's article when writing the account of Nicholson in my *Dictionary of English Architects*.

Yours faithfully,

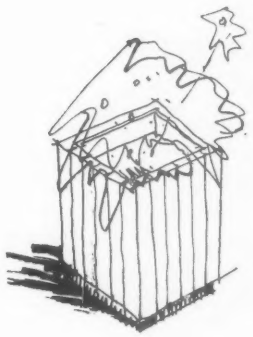
H. M. COLVIN [*HON. A*]

THE R.I.B.A. JOURNAL

Sir,—If a very old member may ask for an inch or two of space, I should be grateful if you would let me say a word about the impending change in the Editorial Chair at Portland Place. I have known the JOURNAL in the most intimate way for nearly 50 years —since 1907 in fact—and I can assure you that in all that time it has never stood so high in all-round merit as it does today. It is, in fact, in my firm opinion, the best architectural journal in the world and the one which no member can wisely afford to ignore. For this the R.I.B.A. in particular and the architectural profession as a whole owes to you and your colleagues on the staff a debt which it can never wholly repay.

Yours very sincerely,

IAN MACALISTER [*HON. A*]



The Export Group for the Constructional Industries—'All-in Tenders' for Work Overseas

APPROVAL has been given to the following Memorandum of Agreement between the Royal Institute and the Export Group for the Constructional Industries for architectural work in connection with 'all-in tenders' for work overseas. The term 'all-in tender' is defined as a comprehensive offer for design, specification and construction, including, if mutually agreed, supervision. The application of the Agreement is for the present to be limited to foreign countries and to India and Pakistan.

(*a*) The normal professional relationship between architects, clients and contractors is to be preferred and will continue except where prospective clients require an 'all-in tender'.

(*b*) Normally, the members of the Export Group will select their own architects but, in the event of Contractors requiring nominations for the purposes of this agreement, application should be made to the President of the Royal Institute who will make such nominations.

(*c*) Architects are prepared to do such work for contractors as will be necessary to enable the contractors to put in an 'all-in tender'. The services provided by the architect and the fee for these services will fall within and be regulated by the provisions of Clause B.3 (Partial Services) (i) and (ii) of the R.I.B.A. Conditions of Engagement and Scale of Professional Charges.

(*d*) The initial agreement between the parties in each case will provide for the retention of the architect's further services as may be mutually agreed.

(*e*) There would be full consultation and collaboration between the architect and the contractor in the preparation of the design.

The architect will undertake as far as is reasonable to prepare his design to suit the particular requirements of the team engaged upon the project, always provided that in his opinion the design is appropriate.

(*f*) The 'all-in tender' to the client and the provision of finance will be made by the contractor.

Book Reviews

Houses, Interiors and Projects (designed by author, Australia, 1949–54), by *Harry Seidler*. ob. 8½ in × 10 in. xx. + 156 pp. incl. pls. & other illus. Sydney: Assocd. Gen. Pubns. 1954. £3 8*s*. 6*d*.

A Past President of The Royal Australian Institute of Architects was quoted in a recent issue of this JOURNAL: 'During the last fifty years, outside forces have made Australian Architecture more and more derivative from overseas sources until, in its more extreme modern form, only the gum trees distinguish it from its contemporaries in similar climates in Europe and the United States.'

For a young country established in what was virtually unpopulated territory, the lack of an indigenous tradition is inevitable. Although Australia trains its own architects, it has also received many men from overseas who have already acquired the architectural culture and tradition of their countries of origin. Mr. Seidler trained at Cambridge, Manitoba, Harvard and Black Mountain College, and worked with Breuer and Niemeyer before emigrating.

It is hardly surprising that his work could be described in the words just quoted, or that one of these influences appears paramount and has been absorbed with considerable sensitivity—at first sight many of his houses might be in the United States in the tradition of Breuer and the Gropius Collaborative. At the other end of the scale, the larger projects owe something to his South American experience. To discern such influences implies no reflection on his integrity as a designer. Not only has his own background, rather than that of his adopted country, moulded his building, but the materials and climate for which he designs have much in common with parts of North and South America.

If then these buildings cannot be called Australian one suspects that they would be the worse for self-consciously trying to be so. Australia can take credit that there are a few people who will commission buildings of this nature. That they are the exception and not the rule becomes clear from Mr. Seidler's introduction—a short essay written for the lay reader, which is a clear statement of the position of modern architecture in Australia. In some European countries and in the States a national and regional character already can be sensed in those buildings supplying everyday needs, and a sense of national character in our new buildings will become increasingly apparent. One looks forward to a time when Australia employs architects in their whole capacity to solve the problems of everyday life, and to the development of the character of a national architecture that will emerge.

The book is well presented, with clear drawings and excellent photographs. That the sunshine is even brighter than that in our own architectural photographs, or that gum trees really do form part of the scenery in this instance is not to the credit of filters or photographers alone. Australian skies and trees are like that anyway!

L. M. DE. SYLLAS [*A*]

The Moscow Kremlin. Its history, architecture and art treasures, by *Arthur Voyce*. 11 in. xiii + 147 pp. incl. front., col'd and other illus. + (92) pls. and pp. of illus., some col'd. + endpapers. Thames & Hudson 1955. £3 3*s*.

The Moscow Kremlin is so rich in history, architecture and art that only one of two courses of action seem to be open to the author who wishes to write about it. Either he can take one small facet of the whole, record it faithfully and comment on it for those specialists who may be interested; or he can give a written 'bird's-eye view' in which detail gives way to outline.

To try to record and comment on all the buildings of the Kremlin, together with their lovely interiors and contents, is a lifetime task for several authors, and it seems to me that Mr. Voyce has tried to do too much. Probably he was so taken with what he saw—and it is indeed breathtakingly wonderful—that he did not know where to begin and end. His book has only 105 pages of text (together with notes and a bibliography), which is inadequate for the specialist but more than an outline and too detailed to fire the enthusiasm of the general reader.

Undoubtedly some will find the book most useful, because it claims to be 'the first comprehensive, richly illustrated study of the Kremlin in English', and no doubt this is a fair statement. Certainly it is full of fine pictures, and a few details are in colour, but even the best photographs are of course no substitute for reality, and the outside of the Kremlin, although magnificent, is not photogenic. Its chief interest lies in its colour and setting, character and vitality, and in its associations, rather than in the formal relationship of its parts.

The author has a real affection for his subject, which he does not use to further any political ends.

DOUGLAS JONES [*F*]

Castles of the Morea, by *Kevin Andrews*. (*American School of Classical Studies at Athens*. Gennadeion Monographs, iv.) 12 in. xxii + 275 pp. incl. pls. and other illus. + xl pls. Princeton, U.S. 1953 ($15.00.)

In 1938 Dr. Shirley H. Weber, Director of the Gennadius Library at Athens, discovered in Venice a folio containing plans of sixteen mediaeval fortresses in the Peloponnese, which had been drawn during the Venetian occupation of 1685–1715. Kevin Andrew's book, the result of four years' research in Greece, is an 'attempt' (his own word) to gather together the historical evidence relating to the castles represented by the Grimani plans (the majority were drawn for Francesco Grimani, a Venetian soldier and magistrate). The study is therefore not a comprehensive account of all the mediaeval castles of the Morea, but simply of those which were of strategic importance to the Venetians in a final attempt to preserve their trade routes to the Levant. With the exception of Mistra, all the castles are, understandably, on or near the coast.

The Middle Ages in Greece, which

survived longer than elsewhere in Europe, have been overshadowed by the civilisation which preceded them. A glance at the bibliography reveals that the period, except in general histories, has been neglected by English-speaking scholars. From 1205 to 1828 Greece was subjected to the rule of foreigners, and each successive period of domination—under Byzantine, Frankish, Turkish and Venetian rule—contributed to the evolution of the castles. Just as the early Byzantines in the 4th century utilised the materials from Greek and Roman buildings, so subsequent generations made use of the fortifications and methods of their predecessors. The whole pattern of development is therefore extremely complex. For example, after the Frankish conquest of 1204, though the feudal system was established, castellar architecture showed little influence from the Western schools. This was the period of the great Gothic cathedrals of West Europe, but at Chlemoutsi, the purest example of French architecture in Greece, the conquerors built in a semi-Romanesque style already outmoded in France.

Under the heading 'Conclusion', the author attempts to disentangle some of these archaeological problems and defines what is, in his opinion, the contribution of east and west. In the previous chapters the history of each fortress is recapitulated from its earliest known beginnings to its last military engagement and this historical survey is followed by an analysis of the architecture. There is however no attempt to integrate architectural features and the sequence of historical events. From the point of view of both history and style the arrangement is arbitrary, since the castles have been studied in the order in which they fell to the armies of the Holy League.

Although the book is a valuable accummulation of historical data, its method of presentation is perhaps over-systematic; even the author's speculations are divided and subdivided into periods and types. The reproduction of the forty Venetian plans, supplemented by numerous photographs of the ruins as they exist today, reveals the variety, scale and magnificence of mediaeval castles in the Grecian islands.

P. H.

Architecture: an introduction to the history and theory of the art of building, by *W. R. Lethaby*. 3rd ed. [Original text] with a new pref. and epilogue by *Basil Ward*. 7¼ in. xxxii + 220 pp. incl. illus. + front. + viii pp. of illus. Lond., etc.: Oxford U.P. 1911, 1955. 18*s*.

Lethaby, if anyone in the architectural world, can surely be predicted an immortal. His writings during his lifetime ranged over 42 years (1889–1931) and since his death a number of them have been reprinted. This work first appeared in the Home University Library series in 1911, and many still living can vividly remember its stimulating, if not startling effect. It was re-edited in 1929. In 1947 a new work in the same series, and with the same main title, covering similar ground in what was thought to be a better proportion, by M. S. Briggs, was published.

Latterly it has been felt that there was still a call for the original text, brought up to date in a different way by additions by another hand, and this is the happy result. The format is larger and the paper and printing better than in 1911; the text is 'printed as in the original edition, without alteration'; a preface of twenty pages, partly background and partly biography, is usefully followed by a list of 'principal literary works' (with a graceful reference to the R.I.B.A.'s own full bibliography). An epilogue traces Lethaby's influence and the future outlook, and illustrations follow, not only of his own buildings and drawings but of recent buildings regarded as implementing his principles. The index is only of main subjects.

The text admittedly contains 'timed references to . . . matters . . . then of recent date'; but Lethaby's last sentence is as true as ever: 'it is a time of beginning as well as of making an end'.

H. V. M. R.

Materials and Methods in Architecture. A compendium of technical articles selected from PROGRESSIVE ARCHITECTURE. *Burton H. Holmes*, ed. 11¾ in. iv + 412 pp. incl. illus. New York: Reinhold; Lond.: Chapman & Hall. [1954.] £4.

Architects cannot quite 'enquire within upon everything', but a great deal of indispensable information has been assembled here from PROGRESSIVE ARCHITECTURE over the last five years by its Technical Editor. Half of the book ranges over construction methods and materials, including less usual ones such as stainless steel, aluminium, porcelain, and a wooden geodesic dome, with examples of building types in which they have been employed. The remainder, under the heads 'Environmental Control' and 'Equipment', deals with lighting, sun control, and water supply, and contains an especially useful section on heating—and cooling—systems. The production of this book is up to PROGRESSIVE ARCHITECTURE'S high standards, except that the photographs suffer a little from not being printed on art paper, and that the index would gain by being more detailed.

House and Garden Book of Better Houses. *Michael Middleton* and *Joyce Lowrie*, eds. 11¼ in. (63) pp. incl. illus. Condé Nast. 1955. 5*s*.

The houses briefly and brightly described and illustrated here are all reproduced from HOUSE AND GARDEN magazine (British version). Some are in the country, some are in the town and some are conversions; all are designed by architects and most of them are apparently lived in by the architects who designed them. Advice is given on the regulations governing house-building and such matters as choice of site, heating, lighting, and the wisdom of using an architect. All in all, a good five-bob's worth.

Architectural Practice and Procedure. etc., by *Hamilton H. Turner*. 5th ed. By John Hamilton Turner. 8½ in. xv + 399 pp. incl. illus. Batsford. 1955. £1 1*s*.

The standard work on professional practice has been revised and brought up to date by the son of the late author. The latest R.I.B.A. Form of Contract is discussed and the appropriate British Standards incorporated. The price is only a guinea.

Bequest of a House to the Architects' Benevolent Society

IT WAS a very happy surprise for the A.B.S. when they learnt some few years ago that there was a possibility of their receiving, as a gift, the house of the late Major Q. M. Bluhm, D.S.O., and his wife, who lived at Ainsdale, near Southport. The possibility has now developed into a fact. The Society is to receive not only the house but a very substantial sum to pay for the maintenance of the house and the upkeep of the garden.

It was the wish of Major Bluhm that the house should be enjoyed by old and sick architects and their wives who, owing to sickness or reduced circumstances, required help, and that they should live comfortably in pleasant surroundings. The house is admirably situated for the purpose —it was built by Major Bluhm for his own use, and as he and his wife had no family, it was arranged on one floor for easy and convenient working. There are two sitting rooms, two good size bedrooms and two very small rooms, used by the Major one as a study and the other as a store (they might be used as single bedrooms), kitchen, bathroom, etc., and a very pleasant garden at the back of the house, overlooking the open country.

The house is at Ainsdale, a suburb of Southport. It is on the main road from Southport to Liverpool. Buses run to both these places and there is a good service of electric trains. It is an easy journey to Manchester and the East Lancashire towns, and would be very accessible for the occupants' relations and friends to visit them. Ainsdale is a very pleasant place; it is inhabited by people working in Southport or Liverpool and is much enjoyed by many retired people and visitors. A more suitable spot for the purpose of the Society could hardly be obtained.

It is a most generous gift, and the Society is deeply grateful; the Council of the Society will be careful in allotting it to suitable tenants, and there is no doubt that it will be enjoyed by those fortunate enough to be chosen to live in it.

The late Major Bluhm was a Fellow of the R.I.B.A. and of the Manchester Society of Architects, and was at one time a member of its Council. He practised in Chorley, and served for many years as a territorial officer, and went through the first world war.

Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.
The Director, The Building Research Station, Garston, near Watford, Herts. Telephone: Garston 2246.
The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow. Telephone: Busby 1171.
The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks. Telephone: Princes Risborough 101.
The Director, The British Standards Institution, 2 Park Street, London, W.1. Telephone: Mayfair 9000.
The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1. Telephone: Museum 5400 (10 lines).
The Director, The Scottish Building Centre, 425–7 Sauchiehall Street, Glasgow, C.2. Telephone: Douglas 0372.

Colour Matching in Paint. Two new paint products which have novel and useful features have been marketed by Sissons Brothers and Company Ltd. of Hull. The first is a rubberised paint called Siscomatte which in two coats gives a quick drying semi-matt surface. Though not an emulsion paint it leaves no brush marks with unskilled application, becomes finger-dry in a few hours and hard overnight; it can be scrubbed.

Its twin product is Siscoglow, a transparent paint which can be used in a single coat over Siscomatte to give a pearly gloss surface. These two products have been evolved to meet the needs of those who require a matt surfaced paint on walls and a gloss finish of the same colour on woodwork. Siscomatte is painted over the walls and woodwork (by brush or roller), the woodwork being subsequently given a coat of Siscoglow; the latter is so transparent that it does not alter the colour value of the Siscomatte. The makers also claim that Siscomatte discourages condensation.

A Liquid Lead Pencil. Anything new in the way of lead pencils must be of interest to architects, for where there is an architect there also will be a pencil, as many a tablecloth will confirm. Architects talking shop together cannot resist illustrating their remarks by sketches, drawn with pencils of all descriptions, and these are almost invariably lead because for some reason or other ball point ink pens do not seem to be the proper medium for architectural explanatory sketches. But lead pencils break, their points need sharpening, and even with a holder the last inch or so is wasted.

The new Scroll Liquid Lead Pencil preserves the individuality of the lead pencil and discards many of its disadvantages, because it uses liquefied graphite contained in a ball point type of metal tube encased in a hexagonal holder with a rubber eraser at the top. Thus it does not need sharpening, it writes with an unvarying medium point and there is no wastage. Further, anything written or drawn can be rubbed out, since the operative material is really lead.

The makers claim that the pencil will outlast many ordinary lead pencils, a dozen at the very least (no small point these days, with lead pencils costing what they do), especially as the point cannot break.

This liquid lead pencil is made by Messrs. Scroll Pens Ltd., and can be bought at the usual stationers' shops at 3s. 11d. Refills are 2s. 2½d.

Aluminium and Other Materials. The Aluminium Development Association, of 33 Grosvenor Street, London, W.1, have issued their Information Bulletin No. 21, under the title *Aluminium in Contact with Other Materials*. It is well known that aluminium by itself forms a self-healing oxide film on its surface that gives it a large measure of resistance to corrosion and often makes surface protection unnecessary, but when it is used in conjunction with other materials some simple precautions are necessary in certain conditions and become an element of good design and installation. Specific materials discussed are grouped under iron and steel, non-ferrous metals, and non-metals such as concrete, cement, plaster, stone and brickwork, soil, timber and hardboard, plaster boards, plastics, glues, mastics and putties, rubber, thermal insulating materials, paints and jointing compounds. The nature of metallic corrosion is briefly described and a table gives an approximate guide to bimetallic effects at junctions involving aluminium.

Those contemplating using aluminium either alone or in contact with other materials, will find much useful information in the booklet, which may be obtained from the Association at the price of 2*s*.

Two-room Heating. Messrs. Gulf Radiators Ltd., of 229 Regent Street, London, W.1, have evolved a simple method of providing background heating to two rooms at once by means of a panel radiator designed to form part of the partition wall. For instance, in a house it can give warmth to a hall and to a living room, and as the panel is recessed in the partition it does not take up floor space. In other buildings, such as schools or offices in which there is a series of rooms, the arrangement should simplify installation and reduce costs. The makers claim that the sound insulation of the partition with the inset radiator is practically the same as would be provided by the partition if it did not contain the radiator.

Oil-Burning Installations. The Fire Offices' Committee of the tariff insurance companies have revised their *Recommendations in Connection with Liquid Fuel (including coal tar fuels) having a flash point not below 150 degrees F. (closed test)*. The previous revision was made in 1935. Among the subjects dealt with in the Recommendations are the installation of storage and service tanks and of pipes and valves, the construction of flues and chimneys and the provision of safe lighting arrangements and of necessary fire extinguishing appliances.

Copies of the Recommendations can be obtained free from the Fire Protection Association, 15 Queen Street, London, E.C.4. The Recommendations include a list of 'General Precautions' to be observed in the operation of installations. The list can be had printed separately on cards for hanging in rooms containing oil-burning equipment, and as soon as supplies are ready they may be procured from the Association as well as from Fire Insurance Companies.

As the Recommendations voice the views of the insurance companies they should be in the hands of installing engineers. They are also of general use to all who are concerned with the safety of oil-burning installations.

Gypsum Building Products. The Gypsum Building Products Association, representing the plasterboard manufacturers, have issued a circular dealing with points that have arisen from inquiries received.

The Association gathers that in some quarters there is an impression that plasterboard is made in one standard size only, 8 ft. by 4 ft. In fact, the following sizes are available: gypsum base-board, width 3 ft., thickness ⅜ in., lengths 2 ft. 6 in., 2 ft. 8 in., 4 ft., 4 ft. 6 in. Gypsum lath: width 1 ft. 4 in., thickness ⅜ in., lengths 3 ft. 6 in., 4ft., 4 ft. 6 in. Gypsum wallboard: widths 2 ft., 3 ft., 4 ft., thickness ⅜ in. and ½ in., lengths 6 ft., 7 ft., 7 ft. 6 in., 8 ft., 8 ft. 6 in., 9 ft., 10 ft. Also length 11 ft., width 3 ft., and length 12 ft., width 4 ft.

These standard sizes are available in plain gypsum plasterboard or in insulating gypsum plasterboard in which additional thermal insulation is provided by a brightly polished aluminium foil veneered to one side.

The Radisil Radiant Electric Heater. This new heater employs a spiral nickel-chrome wire element which is not wound externally round a ceramic or other core as is usually done; instead, the wire is enclosed in a silica sleeve, and on account of this design and construction the manufacturers claim that there is a 10 per cent increase in effective heat output compared with that from an ordinary fire of similar wattage. The elements, which are all of the same size and general appearance, are rated at 250, 500 and 750 watts. Changing the element wire to a different wattage, or renewing a broken one, is simply done by taking it out of its silica sleeve and inserting

a new wire. The other parts of the fire include a sheet steel back plate, a hinged chromium-plated reflector and a safety guard of anodised aluminium. The back plate is holed at each corner for fixing. The complete unit weighs 6½ lb.; it is 26 in. long, 3½ in. high and 4¾ in. deep. The reflector can be moved up or down through an angle of nearly 120 degrees, and there is a 3 ft. spread of radiation in the vertical plane at a distance of about 10 ft. from the unit. The output is 850 B.t.u. per hour for the 250 watt element, 1,700 for the 500, and 2,550 for the 750 watt type.

At present the fire is meant for horizontal fixing, but special elements to enable it to be installed vertically will shortly be available. At the moment the fire is finished only in a combination of cream and gold.

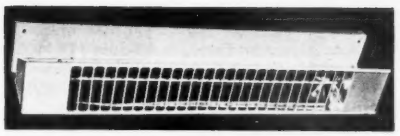
The advantages claimed by the makers, in addition to the extra output of radiant heat, are those of safety because there are no exposed live contacts; the risk of fire through clothes accidentally touching the element are reduced, and the safety guard lessens the risk of burns. As the back plate always remains cool there should be little danger of scorch marks on wallpaper or paint.

The present price of the complete unit is approximately £5 14s. 1d. including tax; the element wire and silica sleeve cost 15s., and the wire itself 2s. 6d. The Radisil heater is made by Hanovia (Lamps Division of Engelhard Industries Ltd.) of Bath Road, Slough, Bucks.

Silicones. Few architects, probably, would be interested to learn that 'silicones are organic compounds of silicon with a structure of alternate atoms of silicon and oxygen, organic groups such as methyl or phenyl being attached to the silicon atoms'. But they will be interested to know that suitably prepared applications of silicones will act as water repellents for the protection of bricks, cement, asbestos cement, sandstone, limestone and other types of natural stone.

At an exhibition in London staged by Midland Silicones Ltd. the many and varied uses of silicone-based preparations were demonstrated, including Dri-sil treatments for water-repellent purposes. The description given of the general properties of these treatments is that they are colourless and do not alter the appearance of the surface to which they are applied. 'They penetrate masonry and make its interior surfaces highly water-repellent. This prevents the passage of liquid water and therefore keeps out rain but does not impede the passage of air or water vapour. Treated masonry can thus still "breathe" and damp can dry out.' But the treatments have a limited resistance to the penetration of water under hydrostatic pressure and therefore are not suitable for below-ground masonry.

The advantages claimed for the Dri-sil treatment of an outside wall are that (1) the wall is kept dry both inside and out; (2) it is preserved from the damaging effects of weathering, e.g. frost embrittlement and the cracking or crazing of cement renderings; (3) it is kept in a clean condition because water-borne dirt cannot penetrate into the surface pores, and the silicone itself repels dirt; (4) efflorescence is prevented, and (5) the good heat insulating properties are preserved.



The Radisil electric heater

Too-extravagant claims however are not made; the explanatory leaflet says that a freshly-treated masonry surface is very water-repellent but this effect does not last for more than a few months; the interior surfaces however remain highly water-repellent and prevent the passage of water for long periods. The treatments are not preservatives but may prolong the life of masonry by preventing the ingress of water, that common cause of deterioration, especially during frosty weather. The effective life of the treatment is estimated to be five years.

As media for protective coatings such as paints and enamels, three silicone resins are available and are resistant to weathering. Since silicone-based paints and enamels withstand continuous exposure to temperatures of 300 degrees C. they are suitable for use on ovens, smoke stacks and boilers. It is claimed that they do not chalk and that the white silicone enamels do not yellow with age.

The head office of Midland Silicones Ltd. is at 19 Upper Brook Street, London, W.1.

Domestic Gas Appliances. The Gas Council has published List No. 4, December 1955, of tested and approved domestic gas appliances. The list has been prepared at the request of the Ministry of Fuel and Power and cancels List No. 3, dated June 1954. The offices of the Gas Council are at 1 Grosvenor Place, London, S.W.1.

British Standards Recently Published

B.S. 585: 1956. **Wood Stairs.** This revised Standard makes references to B.S. 1186, Part 2, for the quality of the timber and the workmanship. Dimensional sizes of the timber have been changed from nominal to finished, as it is thought this will make the Standard easier to use. The scope of the Standard covers softwood stairs for the interior of houses, but not those with cut strings. Price 2s.

B.S. 1236/40: 1956. **Sills and Lintels. (Clayware, Cast-concrete and Natural Stone.)** The five Standards 1236/40 of 1945 dealing with sills and lintels have been revised, and now include sills and lintels for use with wood casement windows, metal casement windows either with or without wood surrounds, and for wood double-hung sash windows of the three types covered by B.S. 644, Parts 1, 2 and 3. The Standard provides for the windows to be fixed in various positions in relation to the external face of the wall in which they are installed.

The clayware sills requirements cover natural clayware, stonework, terracotta and faience. Various sections are given for sills in natural stone and slate. Price 12*s.* 6*d.*, in one volume.

B.S. 584: 1956. **Wood Trim.** In this revised Standard new nomenclature has been introduced for the mouldings, to bring it into line with one which will also be used by E.J.M.A., thus avoiding confusion. A new size of architrave and skirting moulding, $\frac{13}{16}$ in. by 4¼ in. has been introduced and modifications have been made to some of the profiles. Designs and dimensions are given for architraves, skirtings, picture rails, internal door thresholds, cover strips, quadrants, half-round beads and scotias. The requirements for quality of the timber are also included. Price 2s. 6d.

B.S. 2004: 1955. **Polyvinyl Chloride Insulated Cables and Flexible Cords for Electric Power and Lighting (for Working Voltages up to 250 volts).** In the first edition of this Standard tinned copper conductors were not specified; they have now been included as many users require them. Price 6s.

B.S. 473: 1956. **Concrete Plain Roofing Tiles and Fittings.** In this revision of the 1947 edition a clause has been added about surface coatings, since they affect the permeability test. Dimensions of nail holes and those connected with nibs have been revised, and the longitudinal camber is specified. Price 6s.

B.S. 550: 1956. **Concrete Interlocking Roofing Tiles.** This Standard is a revision of the 1945 edition and covers double Roman and pantile patterns. The scope of the tests has been widened so that they will be applicable to other types and sizes. It is no longer obligatory that the colour should penetrate the whole of a coloured tile. Price 5s.

B.S. 2655. Part 3. 1955. **Outline Dimensions for Electric Lifts.** This Standard gives outline dimensions for the installation of six classes of lifts; light traffic passenger; general purpose passenger; intensive traffic passenger; hospital bed/ passenger; general duty goods, and heavy duty goods lifts. Dimensions are given for the lift well, entrances, sills and machine room floor in relation to the car floor, the car's capacity and its speed. These dimensions have been found satisfactory and it is hoped that architects, consulting engineers and lift makers will adopt them as minima wherever possible.

Parts 1 and 2, when published, will deal with the constructional and safety requirements for electric lifts and with lift motors respectively. The price of Part 3 is 3*s.* net.

Membership Lists

ELECTION: 7 FEBRUARY 1956

The following candidates for membership were elected on 7 February 1956.

AS FELLOWS (7)

Brown: Henry Faulkner, M.C. [*A* 1947], Toronto, Ontario, Canada.
Lawson: Peter Dunbar, D.A., Dip.T.P.(Edin.), A.M.T.P.I. [*A* 1940], Lusaka, Northern Rhodesia.
Little: Robert Lindsay [*A* 1937], Sydney, N.S.W., Australia.
Mistri: Minocher Pirozshaw [*A* 1941], Karachi, Pakistan.
Sandbrook: Kenneth James [*A* 1940], New Westminster, B.C., Canada.
Smith: Meredith Saphir [*A* 1928], Sydney, N.S.W., Australia.
Terry: John Ernest Christopher, A.A.Dipl. [*A* 1947], Rawalpindi, Pakistan.

AS ASSOCIATES (16)

Blackhurst: David Brian, Dip.Arch.(Manchester), Nairobi, Kenya.
Chen: William Chong-Wah, B.Arch.(Melbourne), Singapore, Malaya.
Craig-McFeely: Kevin Francis, M.C.D., B.Arch.(L'pool), Nairobi, Kenya.
Fairbrother: Richard Morris, A.P.T.C., Perth, Western Australia.
Griffin: Brian Carlton, B.Arch.(Sydney), Port Moresby, Papua.
Hackett: Brian Henry, Dip.Arch.(Queensland), Brisbane, Queensland, Australia.
Hale: Philip Wilfrid, Colombo, Ceylon.
Hallier: Cyril Lorraine, Johannesburg, S. Africa.
Khambatta: Rusi Sorabji, Basrah, Iraq.
Kok: Hermanus Jacobus, B.Arch.(Pretoria), Aden, Southern Arabia.
Lim: Han Cheng, B.Arch.(Melbourne), Singapore, Malaya.
Loo: Kington, B.Arch.(Melbourne), Kuala Lumpur, Malaya.
Serfontein: Willem Andries, B.Arch.(Rand.), Kroonstad, S. Africa.
Standen: David Herbert, B.Arch.(Sydney), Sydney, N.S.W., Australia.
Stewart: James Rutherford, Auckland, New Zealand.
Tonge: (Miss) Jean Margaret, Toronto, Ontario, Canada.

ELECTION: 6 MARCH 1956

The following candidates for membership were elected on 6 March 1956.

AS FELLOWS (38)

Atkinson: Walter Warne, O.B.E., A.A.Dipl. [*A* 1936].
Barber: Anthony Gerald [*A* 1938], Northallerton.
Barnett: Michael [*A* 1944].
Boon: Geoffrey Maurice [*A* 1930], Stafford.
Brookfield: George Piers, B.Sc.(Dalhousie), S.B. (Mass. Inst. Tech.), B.Litt.(Oxon) [*A* 1926], New York, N.Y., U.S.A.
Bunce: Gerald Edgar [*A* 1927], Bristol.
Butterfield: Lawrence Albert [*A* 1942].
Crowther: James Leonard, M.B.E., Dipl.Arch.(Leeds) [*A* 1933], Leeds.
Darlow: Henry Arthur Jack [*A* 1943].
Davis: David Isaac Stratton [*A* 1940], Gloucester.
Dey: William Gordon, D.A., Dip.T.P.(Edin.), A.M.T.P.I. [*A* 1935], Edinburgh.
Fordham: George Robert [*A* 1947], Chelmsford.
Gill: William Henry, A.M.T.P.I. [*A* 1946].
Goligher: Samuel George [*A* 1934], Belfast.
Goodridge: Peter [*A* 1947].
Gordon: Alexander Esmé, D.A.(Edin.) [*A* 1935], Edinburgh.
Graham: Alexander, D.A.(Glas.) [*A* 1937], Worcester.
Hill: Trevor, Dip.Arch.(Cardiff) [*A* 1935], Mountain Ash.
Jackson: John Edwin [*A* 1938], Folkestone.
Jordan: Ernest Dennis [*A* 1938], Bradford.
Luke: Alan Lawson [*A* 1935].
Maguire: William A., B.Arch.(N.U.I., Dublin) [*A* 1949], Dublin.
Marshall: Hedley Bernard [*A* 1930], Nottingham.
Mills: William [*A* 1936], Birmingham.
Owen: John Hugh Lloyd, B.Arch.(L'pool) [*A* 1925], Leicester.
Parfitt: Alfred John, B.Sc.(Lond.), A.R.I.C.S. [*A* 1950].
Pattrick: Michael [*A* 1936].
Reay: Donald Patterson, M.Sc.(Columbia), B.Arch.(L'pool), A.M.T.P.I. [*A* 1937], Berkeley, California, U.S.A.
Shenstone: Gerald Guy, B.A.(Cantab.), A.A. Dipl. [*A* 1948].
Smith: Richard Vernon, B.Arch.(L'pool) [*A* 1935], Chester.
Tamkin: Arthur Leslie [*A* 1929], Thames Ditton.
Tarling: Charles [*A* 1951].
Taylor: John [*A* 1934], Burnley.
Thompson: Eric Langdon, A.A.Dipl., Dip.T.P. (Lond.), A.M.T.P.I. [*A* 1929], Bristol.
Vernon: Russell Geoffrey Duddell, M.B.E., Dip.T.P.(Lond.) [*A* 1947].
Vine: Cyril Malcolm [*A* 1929].
Wilkins: Ralph Roland, A.A.Dipl. [*A* 1938].
Wright: Arthur Francis Stevenson, M.B.E., D.A.(Dundee) [*A* 1949], Dundee.

AS ASSOCIATES (274)

Alexander: Peter Robert, Dipl.Arch.(U.C.L.).
Arscott: Peter Henry, Bexhill-on-Sea.
Atkins: Gerald Charles, Manchester.
Bader: Lawrence Malcolm.
Baker: Jon, Hinckley.
Baldwin: George Benjamin, Brighton.
Barclay: Stuart Lothian, M.A. (Cantab.), Glasgow.
Barltrop: Peter C. D.
Barnes: Keith William, Dip.Arch.(The Polytechnic), Wallington.
Barnett: Gerald Kendrick, Buxton.
Barnsley: Jon Richard Kellgren, Dipl.Arch.(U.C.L.)
Beaman: Joseph.
Belchambers: Elwin Edward, Deal.
Belcher: Charles Alfred Ivor, Guildford.
Bennett: Arthur Samuel.
Berk: Frank Victor, Salisbury, Southern Rhodesia.
Biddiscombe: Ralph Colin, Harlow.
Bird: Brian John, Bristol.
Bland: Alan Johnstone, Dipl.Arch.(L'pool), Wirral.
Blewett: Peter.
Booth: Francis Eric, B.Arch.(L'pool), Liverpool.
Bowley: John Michael.
Boyt: Dennis Frederick, Reading.
Bradbeer: Francis Henry, B.A.(Arch.)(Lond.), Ossett.
Branch: David Creighton.
Brigham: Peter Charles.
Bright: Ian Burchett, Hemel Hempstead.
Broadway: Robert Patrick Plewman, Dipl.Arch.(Northern Polytechnic), Bedford.
Brocki: Leon, Stoke-on-Trent.
Brown: Graham Arthur, Dip.Arch.(Nottm.), Nottingham.
Brown: John, D.A.(Edin.), Corby.
Bruxby: William James, Liverpool.
Bryant: Eric Owen, Dip.Arch.(Cardiff), Chepstow.
Burrell: Peter Gordon, Liverpool.
Butler: Philip Victor, Hove.
Calnan: Peter Thomas, Sidcup.
Cameron: Hugh Nield, Harrogate.
Campbell: Kevin Patrick, B.Arch.(L'pool), Londonderry.
Cantacuzino: Sherban Georges, M.A.(Cantab.).
Carpenter: David Claude, Purley.
Carter: Colin Michael, Dip.Arch.(The Polytechnic), Little Clacton.
Carter: Douglas William George, Chelmsford.
Chamberlain: Arthur John, Blagdon.
Chambers: Robert Trefor Jamison, Jordanstown.
Charlton: Dennis Horace, Bedford.
Cheney: Donald Harvey, Dip.Arch.(The Polytechnic).
Clark: John Graham, Dip.Arch.(Nottm.), Derby.
Clarke: Percival Albert, Reading.
Cobb: George Barnard, Halifax.
Collins: Michael William Charles, Dipl.Arch.(U.C.L.).
Coltman: Roger Charles, Dipl.Arch.(Oxford), Oxford.
Coombs: Kenneth Arthur.
Corlett: Frederick Balmforth, Wallasey.
Couchman: Geoffrey Norman, Thornton Heath.
Cox: Dennis James, Dip.Arch.(Manchester), Hale.
Croft: Peter Robinson, Dewsbury.
Cross: Peter Murray.
Cryan: John Oliver, Chelmsford.
Curtin: Patrick Clive.
Dailey: William Ramsey Garnett, B.Arch.(L'pool), Liverpool.
Dalby: Michael Scott, Chester.
Dalton: David John, Leigh-on-Sea.
Dalton-Morris: Peter Anthony John, Petersfield.
Darlington: Thomas Ralph, Dipl.Arch.(U.C.L.).
Dean: Dennis Cosser.
Delaney: William Joseph, B.Arch.(N.U.I., Dublin), Dublin.
Dick: Anthony Leonard, Dipl.Arch.(U.C.L.), Beckenham.
Dick: John McCall, East Kilbride.
Dobbing: Peter, B.Arch.(L'pool), Birkenhead.
Dunnings: Stanley Arthur, Fareham.
Eaude: Richard, York.
Eberlin: Richard Harold, Dip.Arch.(Nottm.), Nottingham.
Edmands: Geoffrey William.
Ellard: Terence Lancelot, Worcester.
Elter: Ferdinand.
Evans: David Rhys, Eastbourne.
Evans: William Francis Aloysius.
Exley: Charles David, B.Arch.(L'pool), Kirkella.
FitzGerald: (Mrs.) Elizabeth Alyssum, Nairobi, Kenya.
Fleck: Hans F., Ipswich.
Fowler: Colin Maurice, Wokingham.
Frank: Jeffrey Eldred, Dip.Arch.(C.T.), Port Elizabeth, S. Africa.
Fraser: (Mrs.) June Eiley Elizabeth (*née* **Adam**), Dip.Arch.(Abdn.), Perth.
French: Timothy Hawkins, Hornsea.
Froome-Lewis: Henry Leonard, Dip.Arch.(The Polytechnic).
Fry: Victor Graham.
Fulker: Peter Henry Wilfred, Dip.Arch.(The Polytechnic), Bexley.
Garner: Stephen, B.Arch.(L'pool), Macclesfield.
Geldard: Ralph Stewart, B.Arch.(L'pool), Coventry.
German: Richard Kellett.
Gilby: Peter Stephen, B.Arch.(L'pool), Liverpool.
Gilham: Kenneth Ernest, Ewhurst.
Glennie: David Douglas, B.Arch.(L'pool).
Good: Alfred Ronald, Dip.Arch.(The Polytechnic), Thame.
Goulty: James Frank, Ilford.

Green: Robert James, Bath.
Greene: Norman John, Cardiff.
Gregson: Ralph, Wirrall.
Griffith: Donald Hugh Willis, Dipl.Arch. (U.C.L.), Sutton Coldfield.
Grogan: Edward Martin.
Guy: Ronald Louis, Brighton.
Hain: Walter Vannet, B.Arch.(Rand), Pretoria, S. Africa.
Hamilton: Thomas Gottfried Louis, B.A.(Arch.) (Lond.).
Hanson: Jack, Leeds.
Hargraves: Cecil Francis, Dip.Arch.(Queensland), Brisbane, Queensland, Australia.
Hartridge: Charles Anthony, M.A.(Oxon.), Royston.
Hawker: Denis William, Dip.Arch.(Sheffield), Cheltenham.
Hawkins: Donald, Whitstable.
Haynes: Robert Irvin Elgar, Hertford.
Heyworth: (Miss) Ann Elizabeth, B.Arch. (L'pool).
Hill: John Arthur, Dipl.Arch.(Oxford), Oxford.
Hill: Sydney John, B.Arch.(L'pool), Leicester.
Holland: Bryan George, B.Arch.(Wales), Blaina, Mon.
Homer: William Frederick, Dudley.
Hopkins: Roger John Albert, Chelmsford.
Horne: Charles Anthony William.
Horry: Kenneth Terence, B.Arch.(L'pool), Wallasey.
Hough: Michael, D.A.(Edin.), Wimborne.
Howells: Clifford Percival, Walton-on-Thames.
Hudek: Joachim Francis, Exeter.
Hughes: John Alan, Dip.Arch.(Cardiff), Swansea.
Hulse: Erroll, Dip.Arch.(Pretoria).
Ingleby: Adrian Winkley, B.Arch.(L'pool), Filey.
James: Lionel Henry Paul, Dip.Arch.(Cardiff), Caerleon.
Jeffries: John Basil, Dip.Arch.(Dunelm), Blackpool.
Johns: Arthur William, Bedford.
Johnson: Henry Neil, Bridlington.
Jones: Ernest Douglas, Bath.
Jones: John, Southampton.
Kemball: Francis Joseph, Gatley.
Kemp: Edward, Eastbourne.
Kerr: Eric Alan David, B.Arch.(Melbourne), Brighton, Victoria, Australia.
Kettle: Arthur Barry, B.Arch.(L'pool), Stratford-upon-Avon.
Kilpatrick: Peter James.
Kimbell: James Byerley, Chichester.
Kimber: John.
Kudianavala: Pheroze H. C.
Lancaster: Michael Leeming, Bath.
Lea: Charles Michael Henry, Stourbridge.
Leonard: Hugh Henry Alison.
Levy: Marshall Kenneth, Hove.
Liddell: Ian Thomas, Ramsgate.
Lloyd: Eric Richard, Nairobi, Kenya.
Long: Montague Richard Lawrence, A.R.I.C.S., Epsom.
Lowrie: David Gourlay, D.A.(Dundee), Fife.
Lund: Kenneth, York.
Lyons: Maurice, Dipl.Arch.(Leeds), Bradford.
McCaffrey: Roderick Peter, B.Arch.(N.U.I., Dublin), Sandycove.
McClure: William McIntosh, Glasgow.
McDonough: Allan, Dipl.Arch.(Leeds), Bootle.
Mark: Kenneth William, Plymouth.
Marlow: Frederick Michael, Dip.Arch.(Birm.), Sutton Coldfield.
Marsh: (Mrs.) Margaret, Dip.Arch. (Sheffield), St. Peter Port, Guernsey.
Marshall: David Arthur, Nottingham.
Matthews: Anthony, Trowbridge.
Matthews: Richard Francis, Lancing.
Maude: Jeromy William, Barnstaple.
Meakin: Roy, Dip.Arch.(Nottm.), Duffield.
Meggs: Reginald Charles Thomas, Earl Soham.
Mercer: Alan John, Basildon.
Mercer: William, Southport.
Milner: Rex Norton, Dip.Arch.(The Polytechnic), Ewell.
Mooney: Keith William, Dip.Arch.(Queensland), Gympie, Queensland, Australia.
Mountford: James Christopher, Bromsgrove.
Muggeridge: Brian Stewart, Dip.Arch.(Sheffield), Johannesburg, S. Africa.
Mullan: Anthony James, Auckland, New Zealand.
Neve: John Charles Cuthbert, Beaconsfield.
Newbold: Clifford James.
Newman: William.
Newton-Dawson: William Douglas, Cranleigh.
Northcott: William Richard John, Taunton.
Nottidge: Hugh Andrew, B.A.(Cantab.), Dip. Arch.(The Polytechnic), Sevenoaks.
Onslow: John, Canterbury.
Paterson: Geoffrey Gordon, Oxford.
Peachment: Sydney William.
Pearson: Kenneth David, Dip.Arch.(The Polytechnic).
Penning: David Alfred, Dip.Arch.(The Polytechnic).
Perella: Anthony, Littlehampton.
Perring: Michael, Dipl.Arch.(U.C.L.).
Pettersen: Finn Eric, Harlow.
Pollard: Herbert Arnold, Grimsby.
Poole: Christopher Antony Gower, Dipl.Arch. (U.C.L.), Wraysbury.
Pradham: Sharat Govindrao.
Preece: David Henry, Dip.Arch.(Cardiff), Barry.
Prynn: Bertram Laurence.
Quick: Reginald Gordon, Bath.
Radinger: Philip Arthur.
Randfield: Brian William, Bramhall.
Reed: Herbert Halliwell, Sunderland.
Reed: William John, Cambridge.
Richardson: Martin Barrington Newman, B.A. (Cantab.), Dip.Arch.(The Polytechnic).
Rickard: Stanley William, Dip.Arch.(The Polytechnic), Mitcham.
Rigby: Alan McKenzie, Auckland, New Zealand.
Ritchie: John Donald, B.Arch.(C.T.), Salisbury, Southern Rhodesia.
Roberts: Robert Edward, B.Arch.(L'pool), Liverpool.
Roberts: Terence Robert William.
Robinson: Lloyd Anthony Jacques, Bromley.
Roche: Frederick Lloyd, Dip.Arch.(The Polytechnic), Erith.
Rossi: Anthony Paul, Dip.Arch.(The Polytechnic), Norwich.
Rostron: Robert Michael, B.Arch.(L'pool), Cheltenham.
Russell: John Wallace, Dipl.Arch.(Oxford), Belfast.
Rutledge: Maurice Edward, Great Bookham.
Salisbury: Frank, Chester.
Scott: William Ernest, Mexborough.
Seth: Donald, B.Arch.(L'pool), Castleford.
Severs: Antony Peter, Shoreham-by-Sea.
Sharman: John Adams, Birmingham.
Shaw: Frank Trevor.
Sheehan-Dare: John Gordon Alexander, St. Leonards-on-Sea.
Sherry: Kenneth Percival, Oxford.
Shorney: (Miss) Christine Pamela Lynrose, Taunton.
Simmonds: Harry Colin, Manchester.
Skewes: Ian R., Bristol.
Slater: Brian, Macclesfield.
Smith: John Lewis, Southampton.
Smith: Kenneth Sydney.
Southam: Ronald Frank, Surbiton.
Southin: Christopher Jack.
Southworth: John Walton, B.Arch.(L'pool), Liverpool.
Stains: (Miss) Mavis Gertrude.
Staley: (Miss) Jean Gardner, Eccles.
Stanley: Reginald Lewis, Hastings.
Steers: John Michael, Sale.
Stell: Christopher Fyson, B.Arch.(L'pool).
Stephen: James Douglas.
Stevenson: Thomas Wilfred, Houghton-le-Spring.
Strutt: Alan William, Bromley.
Stubbs: John Bruford, Shoreham-by-Sea.
Sugar: Peter Charles, B.A.(Arch.)(Lond.).
Symonds: Albert Reginald, Edinburgh.
Taylor: John Russell, Dipl.Arch.(Leeds), Leeds.
Taylor: Martin Reynolds, Tankerton.
Taylor: Maurice James Wilson, Norwich.
Taylor: Paul Russell.
Thackeray: Madhukar Yeshwant.
Thaxton: Brian Horace Stanley, M.C.D., B.Arch.(L'pool).
Thomas: David Wyn, Dip.Arch.(Cardiff), Swansea.
Thompson: John Dennis, Dip.Arch.(Birm.), Walsall.
Thompson: Raymond Peter, Norwich.
Thomson: Robert, D.A.(Edin.), Glenrothes.
Thorington: Wilfrid Philip, Colchester.
Thornton: Geoffrey Garth, Auckland, New Zealand.
Toy: Robert James, B.Arch.(L'pool), Falmouth.
Trenowden: Ian Francis, Dip.Arch. (The Polytechnic), Coulsdon.
Tulley: Reginald Gerald, Ramsgate.
Turner: Alan Richard, Dip.Arch.(Nottm.), Nottingham.
Turner: Geoffrey Alan, Corby.
Twells-Grosse: John Devenish, B.A.(Cantab.).
Twigg: Michael William, Dip.Arch.(The Polytechnic).
Vekaria: Naran Jadva, B.Arch.(L'pool).
Waite: Desmond Kenneth, Chippenham.
Wakefield: Peter, Brighton.
Walker: John, Dip.Arch. (The Polytechnic).
Walker: Peter John, B. Arch.(L'pool), Hinckley.
Walker: Thomas Clarke, Newcastle-under-Lyme.
Watson: Peter John, Dip.Arch.(Dunelm), Heswall.
Watt: Brian Edward, Reading.
Weaver: Keith Bertram, B.Arch.(L'pool), Ambleside.
Weller: Michael Gibson, B.Arch.(Melbourne), Melbourne, Victoria, Australia.
Wenman: Graham Anthony, Stroud.
West: Arnold Stanley.
Whatling: Albert John.
Whitcomb: Henry Frank, Southsea.
Whitehouse: John Derek, Bilston.
Whitton: (Miss) Margaret Letters, D.A.(Glas.), Lochwinnoch.
Wilkes: Ivan, Dip.Arch.(Birm.), Willenhall.
Wilkie: George William, M.C.D., B.Arch. (L'pool), Liverpool.
Williams: (Mrs.) Sheila Frances, Dip.Arch. (The Polytechnic).
Willis: William Neville Alexander, Stoke-on-Trent.
Wilson: James Alexander, Kingswinford.
Wiltshire: Kenneth Frank, Salisbury.
Winder: William Joseph, Manchester.
Wright: Anthony Stanley, M.A.(Cantab.), Dip.Arch. (The Polytechnic), Leeds.
Young: Richard Anthony, Bristol.

AS LICENTIATES (16)

Aspinall: Claude Paul Spence.
Barker: Kenneth, Manchester.
Evans: Ellis Carey, Wrexham.
Galloway: William Lamond, Dundee.
Gilpin: Gerald George, Exeter.
Grant, Donald Roy.
Green: Frank Montague, Birmingham.
Griffiths: John, Manchester.
Harker: Edmund George.
Pitt: Edgar William Francis.
Ryall: Reginald Charles, Chessington.
Stevenson: James, Alloa.

Tyrrell: Eric Archibald William, A.R.I.C.S., New Malden.
Ware: Norman Henry, A.R.I.C.S.
Yeats: George Reginald.
Yeo: William, Reading.

ELECTION: 10 APRIL 1956

An election of candidates for membership will take place on 10 April 1956. The names and addresses of the candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Tuesday 3 April 1956.

The names following the applicant's address are those of his proposers.

AS FELLOWS (54)

Adams: John Treadwell [*A* 1944], 19 Fonnereau Road, Ipswich; Kingston Villa, Newmarket. Felix Walter, M. J. Slater, N. G. Weston.

Adler: Cyril [*A* 1946], 55 Pall Mall, S.W.1; 230 Kew Road, Richmond, Surrey. C. J. Epril, Eric Ambrose, P. V. Burnett.

Armstrong: Alfred George [*A* 1932], Ministry of Housing and Local Government, Whiteknights Park, Reading; 3 Upavon Drive, Reading. John Greaves, T. T. Cumming, E. S. Smith.

Baldwin: Edward Thomas [*A* 1939], 11 Eaton Road, Coventry; 79 Benedictine Road, Coventry. A. H. Gardner, R. Hellberg, L. A. Clarke.

Barbary: Peter John, O.B.E., G.M., T.D. [*A* 1948], 15/16 Alverton, Penzance; Golden Meadow, Gulval, Penzance. A. G. Bazeley, A. J. Cornelius, Vyvyan Salisbury.

Barnes: Alfred Stanley, Dipl.Arch.(L'pool) [*A* 1946], 7 Hamilton Square, Birkenhead, Cheshire; 19 Willow Green, Woolton, Liverpool. F. J. M. Ormrod, T. A. Brittain, Herbert Thearle.

Barnes: William Edwin [*A* 1939], 320 Norton Way South, Letchworth, Herts. R. M. Pigott, Dr. Charles Holden, C. M. Crickmer.

Beecroft: Charles Roy [*A* 1936], 11 Orchard Street, Bristol, 1; 'River Bank', Nore Road, Portishead, Somerset. A. F. French, E. H. Button, B. I. Day.

Booth: Raymond Richard [*A* 1943], 43 Great Marlborough Street, W.1; 1 Ventnor Gardens, Barking, Essex. T. S. Darbyshire, Sir Percy Thomas, T. H. Birks.

Bradley: Frank [*A* 1944], Penny Bank Chambers, 4 Wood Street, Bolton, Lancs.; 69 Albert Road, West, Bolton. P. G. Fairhurst, H. T. Seward, Joseph Foy.

Cordiner: Albert Dick, A.M.T.P.I. [*A* 1928], 2 Woodlands Terrace, Glasgow, C.3; 10 Lynedoch Place, Glasgow, C.3. Prof. W. J. Smith, William McCrea, John Watson.

Dannatt: Anthony Richard [*A* 1940], Prudential Buildings, 65A Duke Street, Chelmsford, Essex; 'Ardgour', 421 Springfield Road, Chelmsford. Harold Conolly, Denis Senior, Gordon O'Neill.

Davidson: James Henderson, Dip.Arch.(Abdn.) [*A* 1926], Department of Health for Scotland, York Buildings, Queen Street, Edinburgh, 2; 63 Lockharton Avenue, Edinburgh, 11. A. G. Henderson, Prof. W. J. Smith, F. R. Wylie.

Elsey: Arthur Valentine, A.A.Dipl. [*A* 1936], 1 Vine Street, Uxbridge, Middlesex; 'Greenshutters', Bakers Wood, Denham, Bucks. Clifford Duke, R. J. Duke, Roff Marsh.

Foster: Jack Stroud [*A* 1938], Russell Diplock Associates, 68 Victoria Street, S.W.1; 26 Malden Hill Gardens, New Malden, Surrey. D. C. H. Jenkin, J. S. Walkden, E. C. Scherrer.

Foyle: Arthur Montague, B.A.(Arch.)(Lond.), A.M.T.P.I. [*A* 1939], 1 South Square, Gray's Inn, W.C.1; 6 Queen Anne Mews, W.1. Prof. H. O. Corfiato, R. C. White-Cooper, H. Lidbetter.

Gearey: Keith Warren, B.Arch.(L'pool) [*A* 1933], 27 Dale Street, Liverpool; Charnwood, Eleanor Road, Bidston, Cheshire. M. G. Gilling, W. H. G. Dobie, F. J. M. Ormrod.

Hall: Ruthven Oliphant, A.A.Dipl. [*A* 1947], 13 Welbeck Street, W.1; 8 The Bishop's Avenue, N.2. Sir Howard Robertson, J. M. Easton, Michael Waterhouse.

Hammett: Richard Derek, A.A.Dipl., A.M.T.P.I. [*A* 1940], 29 Sackville Street, Piccadilly, W.1; 9 Genoa Avenue, Putney, S.W.15. J. M. Easton, R. H. Uren, Sir Howard Robertson.

Hare: Albert Frederick [*A* 1945], 24 Baker Street, W.1; Pelling Close, Old Windsor, Berks. M. H. Thomas, C. W. Box, Eric Ambrose.

Harvey: Hammond Joseph, A.R.I.C.S. [*A* 1937], 8–10 King Street, Hammersmith, W.6; 36 Church Road, Barnes, S.W.13. H. St. J. Harrison, Mrs. Gillian Harrison, J. E. K. Harrison.

Innes: Douglas William, Dip.Arch.(Abdn.) [*A* 1930], 14 Golden Square, Aberdeen; 17 Viewfield Gardens, Aberdeen. E. F. Davies, A. G. R. Mackenzie, J. G. Marr.

Jaques: Clifford Sydney, Dip.Arch.(The Polytechnic) [*A* 1945], 110 Horseferry Road, Westminster, S.W.1; 135 High Street, Brentwood, Essex; Thirty Tree, Middleton Road, Shenfield, Essex. D. A. Thomerson, R. O. Foster, A. Thomerson.

Latheron: James Thompson, B.Arch.(Dunelm), A.M.T.P.I. [*A* 1937], 9 The Esplanade, Sunderland; 'West Gable', 11 Lyne Road, Middlestone Moor, Spennymoor. S. W. Milburn, G. T. Brown, W. E. Dow.

Leonard: Simon Aloysius, B.Arch.(L'pool) [*A* 1935], Messrs. William H. Byrne and Son, 20 Suffolk Street, Dublin; Rockville House, 1A Ailesbury Road, Dublin. J. J. Robinson, J. V. Downes, P. J. Munden.

Ling: Arthur George, B.A.(Arch.)(Lond.), M.T.P.I. [*A* 1939], Architectural and Planning Department, Bull Yard, off Warwick Row, Coventry; High Trees, 118 Cliff Hill, Warwick. Prof. R. Gardner-Medwin, J. H. Forshaw, E. M. Fry.

Mabley: Philip John [*A* 1940], 121 Cheapside, E.C.2; Cherries, Kingsley Green, Haslemere, Surrey. H. Lidbetter, H. K. Wakeford, C. J. Jerram.

Maclennan: John, Dip.Arch.(Abdn.), F.R.I.C.S. [*A* 1927], 3 Bon Accord Crescent, Aberdeen; 14 Hamilton Place, Aberdeen. G. A. Mitchell, J. G. Marr, A. B. Gardner.

Mitchell: Tom Noel, B.Arch.(L'pool) [*A* 1932], Regional Architect's Department, Liverpool Regional Hospital Board, 88 Church Street, Liverpool, 1; Whitefield, Barnston Road, Heswell, Cheshire. W. H. G. Dobie, Dr. Ronald Bradbury, F. C. Saxon.

Moore: Shirley Simpson [*A* 1931], Commercial Union Building, 103 High Street, Leicester; 'Graylands', 50 Shirley Avenue, Leicester. F. H. Jones, T. W. Haird, G. A. Cope.

Moya: John Hidalgo, A.A.Dipl. [*A* 1944], 36 Great Smith Street, S.W.1; 'Bellair', Lippitts Hill, High Beech, nr. Loughton, Essex. Frederick Gibberd, G. A. Jellicoe, Richard Sheppard.

Norton: Charles Alfred Roger, A.A.Dipl. [*A* 1940], 29 Sackville Street, W.1; 23 Dorchester Court, Muswell Hill, N.10. Sir Howard Robertson, R. H. Uren, J. M. Easton.

Nunn: Leslie Watson [*A* 1943], Armitage Chambers, Victoria Street, Nottingham; Brendon, Wellin Lane, Edwalton, Notts. A. E. Eberlin, F. A. Broadhead, C. E. Howitt.

Orchard: Herbert John [*A* 1935], Derby House, Derby Road, Haslemere, Surrey. G. M. Aylwin, N. D. Quick, K. F. Templeman.

Pike: Charles Henry [*A* 1934], 29 Gower Street, W.C.1; Flat 6, 1 Linden Gardens, W.2. R. H. Uren, C. W. Pike, J. A. Slater.

Powell: Arnold Joseph Philip, A.A.Dipl. [*A* 1944], 36 Great Smith Street, S.W.1; 1 The Little Boltons, S.W.10. Frederick Gibberd, G. A. Jellicoe, Richard Sheppard.

Redwood: Reginald Seymour [*A* 1929], 18 Gre George Street, Bristol, 1; 4 Woodland Plac Bathwick Hill, Bath. J. R. Edwards, W. . Brown, Kenneth Nealon.

Riddell: James Rattray, Dip.Arch.(Abdn.) [*A* 1930], 13 Bridge Street, Aberdeen; 29 Woodend Place, Aberdeen. E. F. Davies, J. G. Marr, J. A. Ross.

Ritchie: James Watson, D.A.(Edin.) [*A* 1926], 9 Tay Square, Dundee; Gellyhill, 32 Strathern Road, West Ferry, Dundee. Donald Ross, H. M. Smail, T. H. Thoms.

Sawyer: Peter Ross, M.C., T.D., J.P. [*A* 1947], St. John's Rooms, High Street, Winchester, Hants; Honeywick, Bereweeke Avenue, Winchester. Colonel R. F. Gutteridge, J. B. Brandt, A. L. Roberts.

Schneider: Arnold, M.A.(Oxon), B.A.(Arch.)(Lond.) [*A* 1939], Church Commissioners, 1 Millbank, S.W.1; 7 Lyall Mews, S.W.1. Prof. H. O. Corfiato, Eric Ambrose, D. Nightingale.

Selby: Laurence John [*A* 1940], 79 High Street, Southend-on-Sea, Essex; 53 St. David's Drive, Leigh-on-Sea, Essex. A. S. Belcham, P. F. Burridge, J. M. Scott.

Sharman: Reginald Percy [*A* 1935], 13 Welbeck Street, W.1; 107 Sunnyfield, Mill Hill, N.W.7. H. G. C. Spencely, Anthony Minoprio, Frank Risdon.

Smeed: Charles William James, Dipl.Arch. (U.C.L.) [*A* 1930], The Bartlett School of Architecture, University College, Gower Street, W.C.1; 20B Addison Grove, Bedford Park, W.4. Prof. H. O. Corfiato, S. H. Loweth, D. du R. Aberdeen.

Steer: Louis George [*A* 1942], 8 King Square, Bridgwater; 1 Hammet Street, Taunton; 40 Quantock Road, Bridgwater. R. G. Nicholls, R. M. Torrens, R. M. Hewlett.

Stokes: Horace William [*A* 1925], 5 Victoria Square, Birmingham, 2; 117 Bradbury Road, Olton, Birmingham, 27. G. F. Thomas, H. W. Hobbiss, C. E. M. Fillmore.

Treadgold: Paul Henry, A.A.Dipl. [*A* 1941], 1 Vine Street, Uxbridge, Middlesex; Lavender Wall, Warren Road, Uxbridge. Clifford Duke, R. J. Duke, Roff Marsh.

Wales: (Mrs.) Mary Dorrien, Dipl.Arch.(Leeds), [*A* 1937], 19 High Street, Skipton, Yorks; Stirton Croft, nr. Skipton. Eric Morley, Noel Pyman, W. H. King.

Wilson: James Mollison [*A* 1924], 3 Chandos Street, W.1; 312 Rodney House, Dolphin Square, S.W.1. H. C. Mason, O. F. Savege, W. S. A. Gordon.

Winton-Lewis: Basil Aelfred Peter, Dipl.Arch. (U.C.L.) [*A* 1941], 29 Manchester Street, W.1; 791 Finchley Road, N.W.11. Prof. Sir Albert

Richardson, Prof. H. O. Corfiato, R. C. White-Cooper.

Wright: John, A.A.Dipl. [*A* 1948], 35 Thurloe Place, S.W.7; Old Potteries Close, Cockshot Hill, Reigate, Surrey. Sir Hugh Casson, E. B. O'Rorke, Victor Heal.

and the following Licentiates who are qualified under Section IV, Clause 4(*c*) (ii) of the Supplemental Charter of 1925:

Dannatt: Arthur Richard, Prudential Buildings, Chelmsford, Essex; 'The Orchards', Great Waltham, near Chelmsford. Harold Conolly, Denis Senior, Gordon O'Neill.

Richardson White: William, 23 and 33 Albert Street, Mansfield, Notts.; Red Croft, Edwinstowe, Notts. F. W. Tempest, J. S. Bramwell, Clifford Bond.

Rudd: John Pearson, 21 Albert Road, Middlesbrough, Yorks., 12 Cambridge Avenue, Middlesbrough. S. W. Milburn, Samuel Harrison, G. P. Stainsby.

AS ASSOCIATES (74)

The name of a school, or schools, after a candidate's name indicates the passing of a recognised course.

Arnold: Gordon Beckley (Final), 162 Holland Park Avenue, W.11. W. A. Rutter, E. D. Mills, G. I. C. Highet.

Ashdown: David Grantham, B.Arch.(L'pool) (Liverpool Sch. of Arch: Univ. of Liverpool), County Hall, Hertford. Prof. R. Gardner-Medwin, C. H. Aslin, A. S. Gray.

Bedford: John, Dipl.Arch.(Oxford) (Sch. of Tech. Art and Commerce, Oxford: Sch. of Arch.), 71 Southfield Road, Oxford. Gerald Lacoste, F. T. Pritchard, Reginald Cave.

Bellotti: Leopold Lucas, Dip.Arch.(Manchester) (Victoria Univ. Manchester: Sch. of Arch.), 52 Clyde Road, West Didsbury, Manchester, 20. A. L. Dotto, Prof. R. A. Cordingley, Dr. W. A. Singleton.

Benton: Peter Albert Stanley (Final), Messrs. Oscar Faber and Partners, Torrington House, Holywell Hill, St. Albans, Herts. Edwin Rice, T. J. Lynch, Norman Keep.

Berriman: Ian Palmer, B.E.(Arch.) (Adelaide) (Passed a qualifying exam. approved by the R.A.I.A.), 16 Mecklenburgh Square, W.C.1. D. W. Berry, L. Laybourne-Smith, J. D. Cheesman.

Berryman: James Sharples (Final), 7 Kingsland Grove, Blackpool. C. H. MacKeith, Halstead Best, H. T. Jackson.

Burnie: Roy Cedric (Final), 'Ramblers', The Glade, Fetcham, Surrey. A. G. Alexander, W. F. Granger, A. C. Hopkinson.

Burnside: Dennis Theodore, Dip.Arch.(Manchester) (Victoria Univ. Manchester: Sch. of Arch.), 77 Westcliffe Drive, Layton, Blackpool. Prof. R. A. Cordingley, F. L. Halliday, Halstead Best.

Burton: Michael, B.Arch.(L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), Long Lane, Clayton West, Huddersfield. Norman Culley, Prof. Sir Albert Richardson, C. H. Aslin.

Butterworth: John, B.A.(Sheffield) (Univ. of Sheffield: Dept. of Arch.), 21 Marlborough Road, Sheffield, 10. Prof. Stephen Welsh, H. B. S. Gibbs, H. B. Leighton.

Cain: Michael, A.A.Dipl. (Arch.Assoc., London: Sch. of Arch.), 34 Park Village East, N.W.1. Sir Hugh Casson, Henry Elder, R. F. Jordan.

Carter: Raymond Richard George (Final), 'Cherry Garth', Cheriton Avenue, Iford, Bournemouth. G. D. G. Hake, E. Frear, E. W. Roberts.

Casson: William Elmar, Dip.Arch.(Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), 67 Thorntree Drive, West Monkseaton, Whitley Bay, Northumberland. Prof. W. B. Edwards, Bruce Allsop, F. Fielden.

Chell: Rex Eustace Joseph (King's Coll.(Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), c/o Architectural and Planning Dept., Bull Yard, Off Warwick Row, Coventry. Prof. W. B. Edwards, Bruce Allsop, J. H. Napper.

Corline: Edward George (Special Final), Old Bank House, Thames Street, Windsor. Edward Narracott, A. L. Roberts, C. W. Box.

Cottingham: George Eyles, Dip.Arch.(Nottm.) (Nottingham Sch. of Arch.), 'West Lea', 169 Bourne Road, Spalding, Lincs. T. N. Cartwright and the President and the Hon. Secretary of the Nottingham, Derby and Lincoln Society of Architects under Bye-law 3(*a*).

Evans: Gwyn Owen, Dip.Arch.(Sheffield) (Univ. of Sheffield, Dept. of Arch.), Llwyn-Hwlcyn, Llanbedr, Merioneth, N. Wales. Prof. Stephen Welsh, A. Douglas Jones, T. M. Ashford.

Ferrier: John, Dip.Arch.(Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), Lilybank, Johnshaven, Nr. Montrose, Angus, Scotland. E. F. Davies, A. G. R. Mackenzie, J. G. Marr.

Fortune: John Frederick, B.Arch.(Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), Borriskill, Maryport, Cumberland. Prof. W. B. Edwards, Prof. J. S. Allen, Bruce Allsop.

Garner: Brian Joseph Robinson, Dip.Arch.(Dunelm) (King's Coll. (Univ. of Durham) Newcastle upon Tyne, Sch. of Arch.), 219 St. Luke's Road, Ford Estate, Sunderland. Prof. W. B. Edwards, D. L. Couves, A. Applegarth.

Gee: Stuart, Dip.Arch.(Sheffield) (Univ. of Sheffield: Dept. of Arch.), 3 Holly Crescent, Ripponden, Nr. Halifax, Yorks. Prof. Stephen Welsh, H. B. S. Gibbs, H. B. Leighton.

Gould: Malcolm John (Final), 19 Abergeldie Road, Lee, S.E.12. G. B. Colbourn, Harold Overnell, J. S. Walkden.

Gray: David Duncan, Dip.Arch.(Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 192 King Street, Aberdeen, Scotland. E. F. Davies, W. A. Ross, J. A. Allan.

Griffiths: John Pankhurst, Dip.Arch.(Manchester) (Victoria Univ. Manchester: Sch. of Arch.), Lodge Huntworth, Church Road, Bristol, 9. Prof. R. A. Cordingley, E. S. Benson, Dr. W. A. Singleton.

Harries: Michael Vaughan, B.Arch.(Wales) (Welsh Sch. of Arch.: The Tech. Coll. Cardiff), 19 Rhydhelig Avenue, Cardiff. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

Heath: Derek Anthony (Final), 4 Malmesbury Road, South Woodford, Essex, E.18. Applying for nomination by the Council under Bye-law 3(*d*).

Henderson: Douglas Manon, D.A.(Edin.)(Edinburgh Coll. of Art: Sch. of Arch.), 54 Blinkbonny Road, Edinburgh, 4. Applying for nomination by the Council under Bye-law 3(*d*).

Horne: John Silvester, M.A.(Cantab.), B.Arch.(L'pool) (Liverpool Sch. of Arch.), Daffodil Cottage, Dunsmore, Nr. Wendover, Bucks. W. P. Dyson, Prof. R. Gardner-Medwin, Prof. L. B. Budden.

Ingham: (Miss) Eileen Mary, B.Arch.(L'pool) (Liverpool Sch. of Arch. Univ. of Liverpool), 165 St. Annes Road East, St. Annes, Lytham St. Annes, Lancs. Prof. R. Gardner-Medwin, R. R. Young, Prof. L. B. Budden.

Ingram: Alexander Leslie, D.A.(Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 64 Greenbank Crescent, Edinburgh, 10. Prof. R. H. Matthew, W. H. Kininmonth, J. R. McKay.

Jameson: Gordon (Final), Top Flat, The Vicarage, Marden, Kent. J. S. Walkden, E. T. A. Smith, R. T. Green.

Jamieson: Ronald Jeffrey Clark, D.A.(Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 49 Brunstane Road, Joppa, Midlothian, Scotland. J. R. McKee, J. S. Johnston, W. E. Hollins.

Jenkins: Sylvan Lewis, B.Arch.(Wales) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 12 Dewsland Park Road, Newport, Mon. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

Jones: Albert Ellwood Eaton (Special Final), 43 The Poplars, Bramhope, Nr. Leeds. D. A. Fowler, F. Chippindale, Allan Johnson.

Keith: Graham Alastair, Dip.Arch.(Birm.) (Birmingham Sch. of Arch.), 2 Sunnyside, Cliff Road, Overstrand, Nr. Cromer, Norfolk. A. Douglas Jones, T. M. Ashford, C. J. Tomkins.

King: Richard John (Final), 12B Queens Park Road, Caterham, Surrey. Applying for nomination by the Council under Bye-law 3(*d*).

Kingsnorth: Bryan William, Dip.Arch.(The Polytechnic) (The Poly. Regent Street, London: Sch. of Arch.), 57 Regents Park Road, Shirley, Southampton, Hants. E. M. Galloway, J. S Walkden, A. C. Townsend.

Lee: William Rees, Dip.Arch.(Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), Westwood View, Blaina, Mon. Johnson Blackett, Lewis John, Dr. T. A. Lloyd.

Littlejohn: Roy Derek (Sch. of Tech.: Art and Commerce, Oxford: Sch. of Arch.), 189 Alma Road, Charminster, Bournemouth, Hants. G. W. Jackson, A. E. Geens, R. A. Phillips.

McCracken: Findlay Jack, D.A.(Glas.) (Glasgow Sch. of Arch.), 1 Victoria Road, Larbert, Stirlingshire. Prof. W. J. Smith, P. R. Walker, H. Wilson.

Macgregor: Alan Fraser Dundas, D.A.(Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 58 Polwarth Gardens, Edinburgh, 11. J. J. Johnston, J. R. McKay, T. W. Marwick.

Mackenzie: Kenneth Richardson, Dip.Arch.(Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 'The Cottage', Spynie, By Elgin, Morayshire. E. F. Davies, A. B. Gardner, J. G. Marr.

McRobert: John Boag, Dip.Arch.(Abdn.), (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 191 Clifton Road, Aberdeen. E. F. Davies, A. G. R. Mackenzie, J. G. Marr.

Mackie: John Stuart, Dip.Arch.(Sheffield) (Univ. of Sheffield, Dept. of Arch.), 18 Crow Wood Park, Halifax. Prof. Stephen Welsh, C. Sunderland, H. B. Leighton.

Marsh: Horace George (Special Final), 84A Westbourne Terrace, W.2. Gordon Tait, H. W. Weedon, Arthur Bailey.

More: James Bremner, Dip.Arch.(Nottm.) (Nottingham Sch. of Arch.), 110 Harlaxton Drive, Lenton Sands, Nottingham. T. N. Cartwright and the President and Hon. Secretary of the Nottingham, Derby and Lincoln Society of Architects under Bye-law 3(*a*).

Morgan: Adrian Kirkpatrick Winstanley (Final), 'Norrard', Cobham Road, Strood, Kent. Applying for nomination by the Council under Bye-law 3(*d*).

Morrice: John, Dip.Arch.(Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 27 Kings Gate, Aberdeen. E. F. Davies, J. G. Marr, A. G. R. Mackenzie.

Nuttgens: Patrick John, M.A., D.A.(Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), Edinburgh University School of Scottish Studies, 27 George Square, Edinburgh, 8. L. G. MacDougall, I. G. Lindsay, J. R. McKay.

Olumuyiwa: Oluwole Olusegun, Dip.Arch. (Manchester) (Victoria Univ., Manchester: Sch. of Arch.), c/o Architects' Co-Partnership, 44 Charlotte Street, W.1. Prof. R. A. Cordingley, Cecil Stewart, J. P. Nunn.

Parsons: Eric Michael, Dip.Arch.(Sheffield) (Univ. of Sheffield, Dept. of Arch.), 39 Moorland Avenue, Liswerry, Newport, Monmouthshire. Prof. Stephen Welsh, Johnson Blackett, H. B. Leighton.

Philpott: Richard Bernard (Special Final), 19 Clayton Avenue, Culcheth, Warrington, Lancs. T. L. Viney, H. V. Lobb, D. J. Oliver.

Purkiss: Donald Newton (Final), 26 Springhill Road, Saffron Walden, Essex. Norman Keep, T. J. Lynch, Edwin Rice.

Reed: John Dayman, Dip.Arch.(Nottm.) (Nottingham Sch. of Arch.), Flat 1, Newcastle Court, Newcastle Circus, The Park, Nottingham. E. W. Pedley and the President and Hon. Secretary of the Nottingham, Derby and Lincoln Society of Architects under Bye-law 3(*a*).

Ridgeway: James Michael, Dip.Arch.(Sheffield) (Univ. of Sheffield, Dept. of Arch.), 13 St. James Row, Sheffield, 1. Prof. Stephen Welsh, H. B. S. Gibbs, H. B. Leighton.

Roberts: (Miss) Ann Ruth, B.A.(Manchester) (Victoria Univ. Manchester: Sch. of Arch.), 31A Hampstead Lane, N.6. Prof. R. A. Cordingley, J. Holman, J. Berger.

Rodger: William Daley, D.A.(Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 44 Strathkinnes Road, Kirkcaldy, Fife. W. H. Kininmonth, J. R. McKay, Prof. R. H. Matthew.

Shinn: Clive Eric (Final), 230 Aylsham Road, Norwich, Norfolk. Paul Nightingale, J. E. Franck, Henry Elder.

Smith: David Leonard (Final), The Challenger, North Hinksey Village, Nr. Oxford. K. A. Stevens, R. F. Dodd, Reginald Cave.

Smith: Ronald Frederic, Dip.Arch.(Birm.) (Birmingham Sch. of Arch.), 'Courtney House', Bridge Street, Olney, Bucks. A. Douglas Jones, Max Lock, H. W. Weedon.

Staines: David (Special Final), 46 Oakland Road, West Monkseaton, Whitley Bay, Northumberland. L. S. Stanley, G. E. Charlewood, R. N. Mackellar.

Stevenson: Harold, B.A.(Manchester) (Victoria Univ., Manchester: Sch. of Arch.), 1 Hermitage Road, Crumpsall, Manchester, 8. Prof. R. A. Cordingley, H. T. Seward, E. S. Benson.

Strang: Robert Andrew, D.A.(Glas.) (Glasgow Sch. of Arch.), 419 Carntynehall Road, Glasgow, E.2. Prof. W. J. Smith, William McCrea, A. G. Jury.

Sturges: Harold William (Final), 383 Whitton Avenue East, Greenford, Middlesex. Edwin Rice, Norman Keep, T. J. Lynch.

Tasker: Sidney Hawthorne, Dip.Arch.(Manchester) (Victoria Univ., Manchester: Sch. of Arch.), 32 Leeds Road, Nelson, Lancs. Prof. R. A. Cordingley, Richard Jaques, E. S. Benson.

Taylor: Geoffrey, Dipl.Arch.(Northern Polytechnic) (Northern Poly. (London): Dept. of Arch.), Ennismore, Little Marlow Road, Marlow, Bucks. T. E. Scott, C. G. Bath, Harold Bramhill.

Toffolo: Nori, D.A.(Glas.) (Glasgow Sch. of Arch.), 'Fanna', 19 The Loaning, Whitecraigs, Renfrewshire. J. A. Coia, A. G. Henderson, Prof. W. J. Smith.

Varty: Derek, Dip.Arch.(Dunelm) (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 'Delvar', 90 Windy Nook Road, Gateshead, 10, Co. Durham. Prof. W. B. Edwards, J. H. Napper, G. H. Gray.

Watson: Roy Lawrence (Final), 167 Copnor Road, Portsmouth, Hants. A. C. Townsend, J. V. Nisbet, R. L. Reynish.

Watt: Arthur Hay, Dip.Arch.(Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 'Meadowvue', Deveron Road, Huntly, Aberdeenshire. E. F. Davies, A. G. R. Mackenzie, J. G. Marr.

Weston: Graham, Dip.Arch.(Nottm.) (Nottingham Sch. of Arch.), 48 West Bank Road, Allestree, Derbyshire. T. N. Cartwright and the President and Hon. Secretary of the Nottingham, Derby and Lincoln Society of Architects under Bye-law 3(*a*).

Whittaker: John Wallace, Dip.Arch.(Sheffield) (Univ. of Sheffield, Dept. of Arch.), 31 Cumberland Drive, Dundonald, Belfast, Northern Ireland. Prof. Stephen Welsh, H. B. Leighton, H. B. S. Gibbs.

Wyatt: Alan James (Final), 'Treize', Mousehole Lane, Bitterne, Southampton. A. C. Townsend, Sir Thomas Bennett, P. H. P. Bennett.

AS LICENTIATES (43)

Backhouse: Arthur Graham, Ministry of Works, Neville House, S.W.1; 77 Dumbreck Road, Eltham Park, S.E.9. R. T. Boutall, George Ford, Z. Sirotkin.

Benbow: Kenneth Mollan, F.R.I.C.S., Old Stone House, East Grinstead, Sussex; Sandstones, Ashurst Wood, East Grinstead. C. H. Walker, R. P. Baines, P. H. Winter.

Biggs: William James, 28 South Audley Street, W.1; Penshurst, George Road, Kingston Hill, Surrey. J. K. G. Sarjeant, R. C. White-Cooper, Basil Hughes.

Bower: Harry Thompson, c/o J. Fred Pye, Esq., 4 Abbey Walk, Grimsby, Lincs.; 1 Butler Place, Cleethorpes, Lincs. J. W. M. Dudding and the President and Hon. Secretary of the Nottingham, Derby and Lincoln Society of Architects under Bye-law 3(*a*).

Broad: Leyton Samuel, Ministry of Works, Cleland House, Page Street, S.W.1; 95 Mayfair Avenue, Worcester Park, Surrey. W. A. Rutter, D. G. Walton, Stanley Hamp.

Coles: Frank William, L.C.C., County Hall, S.E.1; 41 Colls Road, Peckham, S.E.15. K. L. Sharpe, Edwin Williams and applying for nomination by the Council under Bye-law 3(*d*).

Creak: Leo, The Allied Schools, Aldwych House, Aldwych, W.C.2; 93 Cadogan Gardens, S.W.3. A. B. Knapp-Fisher, F. R. S. Yorke, George Whitby.

Davies: Joseph Maldwyn, Architect and Surveyor, Wrexham Borough Council, 31 Chester Street, Wrexham; 9 Percy Road, Wrexham. Prof. Gordon Stephenson, R. R. Young, F. C. Roberts.

Devlin: George Edwin, National Coal Board, North Eastern Division, Architects Department, Denaby, near Doncaster; Kirkholme, Old Denaby, Nr. Doncaster. J. A. Dempster, Hugh Smith, R. M. Bruce.

Edwards: Eric William, Stretton's Derby Brewery Ltd., Derby; 'Fairmead', Derby Road, Risley, Derbyshire. Herbert Jackson, Stuart Bentley, Reginald Edmonds.

England: Bernard, Architect's Department, Ribble Motor Services, Ltd., Frenchwood, Preston, Lancs.; 7 Manor Avenue, Penwortham, Preston. Thomas Duffy, A. T. Nicholson, F. N. Pinder.

Gear: Arthur Henry, Architect's Dept., L.C.C., County Hall, S.E.1; 38 Ravenor Park Road, Greenford, Middlesex. J. Holman, Edwin Williams, A. R. Borrett.

Gillis: James, F.R.I.C.S., Messrs. Thomas and Thomas, 142 Sussex Gardens, Paddington, W.2; Dene Corner, Hill Road, Northwood, Middlesex. R. A. Jensen, L. J. Wood, S. Stern.

Guildford: Ronald George Edward, Borough Architect's and Housing Department, Town Hall, Fulham, S.W.6; 47 Beaulieu Drive, Pinner, Middlesex. J. P. Lovell, E. E. Pettengell, E. A. Fermaud.

Hands: James Thomas, Borough Engineer's Dept., Borough of Enfield, 7 Little Park Gardens, Enfield, Middlesex; 68 Graeme Road, Enfield. Applying for nomination by the Council under Bye-law 3(*d*).

Harrison: Frank Podesta, Co-operative Wholesale Society Ltd., 99 Leman Street, E.1; 'The Firs', Westerham, Kent. V. L. Nash, Shirley Knight, W. J. Reed.

Hasker: Frederick Leslie, 13 Welbeck Street, W.1; 66 Willifield Way, Hampstead Garden Suburb, N.W.11. Sir Howard Robertson, J. M. Easton, Alan Marlow.

Hill: George William, c/o Messrs. Duke and Simpson, 6–7 Great Castle Street, W.1; 14 Cambridge Mansions, Battersea, S.W.11. H. Colbeck, A. H. Ley, C. J. Jerram.

Hoban: Francis Joseph, County Architect's Department, The Castle, Chester; 21A City Walls South, Chester. E. M. Parkes, F. H. Brown, P. H. Lawson.

Holmes: Henry Robert, Surveyor's Department, The London Hospital, E.1; 6 Lower Barn Road, Purley, Surrey. Frederick Barber, Charles Sykes, Briant Poulter.

Holmes: William Walter, Chief Architect, Acton Borough Council, Town Hall, Acton, W.3; 75 The Chase, Eastcote, Pinner, Middlesex. R. E. Matthews, E. R. Taylor, W. R. Maxfield.

Hooker: Arthur Joseph, c/o County Architect, Grove Park, Wrexham, Denbighshire; 22 Grosvenor Road, Wrexham. H. E. Matthews, G. Bellis, E. J. Ricketts.

Hoskings: Kenneth le Garde, Ministry of Works, Cleland House, Westminster, S.W.1; 60 Horn Park Lane, Lee, S.E.12. Z. Sirotkin, A. C. Hopkinson, A. G. Alexander.

Johns: William Henry Alun, Benskin's Watford Brewery Ltd., Watford, Herts.; 8 Elm Close, North Harrow, Middlesex. D. F. Ingleton, Howard Williams, J. C. F. James.

Lister: James, Messrs. Michael Nairn and Co. Ltd., P.O. Box No. 1, Kirkcaldy, Fife; 8 David Street, Kirkcaldy. R. F. Hutchison, R. G. Cox, E. L. Gale.

Longman: Alfred Ernest, c/o Messrs. Hope and Davidson, 21 Station Road, Keswick; Shorley Croft, High Hill, Keswick. J. H. Haughan and the President and Hon. Secretary of the Northern Architectural Association under Bye-law 3(*a*).

McAlery: John, Mayfair, Arthur Square, Belfast; 34 Fourth Avenue, Bangor, N. Ireland. R. H. Gibson and the President and Hon. Secretary of the Royal Society of Ulster Architects under Bye-law 3(*a*).

McGahon: Thomas Pius, 9–18 Exchange Buildings, Dundalk, Co. Louth, Eire; 61 Castle Road, Dundalk. Vincent Kelly and the President and Hon. Secretary of the Royal Institute of the Architects of Ireland under Bye-law 3(*a*).

Mansell: George Hennah, 20 Norfolk Mansions, Prince of Wales Drive, S.W.11. G. R. Dawbarn, William Crabtree, Eustace Remnant.

Mason: John Henry, 160 Carlton Road, Romford, Essex. William Evans and the President and Hon. Secretary of the Essex, Cambridge and Hertfordshire Society of Architects under Bye-law 3(*a*).

Norris: John Floyd, Messrs. Charles E. Ware and Son, 20 Richmond Road, Exeter, Devon; 5 Pennsylvania Park, Exeter. J. Challice, H. W. E. Lindo, Louis Osman.

Perrin: Major George William, 19 Roden Avenue, Kidderminster, Worcs. W. H. Godwin, Hubert Clist, G. F. Webb.

Porteus: Stuart Ian, c/o Michael Rosenauer, Esq., 13A Old Burlington Street, W.1; 129 Lewisham Road, S.E.13. Michael Rosenauer, Sydney Tatchell, S. B. Caulfield.

Press: Frederick James, J.P., Messrs. Press and Wright, 20 Regent Place, Rugby; 8 Elsee Road, Rugby. C. H. Elkins, F. Goldsbrough, G. R. Barnsley.

Salmon: Albert James, A.R.I.C.S., A.M.T.P.I., Town Hall, Old Street, E.C.1; 'Cornerways', Heathfield, Chislehurst, Kent. Terence Page, Victor Wilkins, K. M. B. Cross.

Smith: Clarence, Northing House, Gringley-on-the-Hill, Nr. Doncaster. Clifford Hickson, Norman Culley, J. A. Dempster.

Symonds: Robert McDowall, 27 Wellesley Road, Chiswick, W.4. Prof. C. S. Burgess, C. W. Fowler, Sir Edward Maufe.

Taylor: Albert Percy, 59 Chapel Street, Belper, Derbyshire. F. H. Crossley and the President and Hon. Secretary of the Nottingham, Derby and Lincoln Society of Architects under Bye-law 3(*a*).

Tims: Thomas Owen, Co-operative Wholesale Society Ltd., Architect's Department, St. Mary Street, Cardiff; 15 Heol Penyfai, Whitchurch, Cardiff. T. E. Smith, Morgan Willmott, Gerald Stanley.

Tobin: Robert Joseph, Architect's Dept., L.C.C., County Hall, S.E.1; 13 Pinewood Avenue, Hatch End, Pinner, Middlesex. K. L. Sharpe and applying for nomination by the Council under Bye-law 3(*d*).

van-Nuffelen: Alphonse Albert, Messrs. Stone, Toms and Partners, 28 South Audley Street, W.1; 3 Golden Yard, Hampstead, N.W.3. W. E. Masters, George Whitby, J. K. G. Sarjeant.

Wardle: Rupert Leopold McLean, Messrs. Albert E. Reed and Co. Ltd., Aylesford Paper Mills, Larkfield, Nr. Maidstone, Kent; Orchardene, 10 Spot Lane, Bearsted, near Maidstone. Applying for nomination by the Council under Bye-law 3(*d*).

Wells: Roger Philip Basil, 9 New Street, Grimsby; 7A Great Coates Road, Grimsby. J. W. M. Dudding and the President and Hon. Secretary of the Nottingham, Derby and Lincoln Society of Architects under Bye-law 3(*a*).

ELECTION: 19 JUNE 1956

An election of candidates for membership will take place on 19 June 1956. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Friday 15 June 1956.

The names following the applicant's address are those of his proposers.

AS FELLOWS (10)

Altham: George Bernard, Dipl.Arch.(L'pool) [*A* 1940], 12 Galle Face Court 2, Colombo, 3, Ceylon; 10 Charles Place, Colombo, 3. H. E. Gonsal, J. C. Nilgiria, Prof. L. B. Budden.

Bhalla: Jai Rhattan [*A* 1946], Messrs. Bhalla, Sharma and Puri, G 67, Connaught Circus, New Delhi, India. S. H. Parelkar, G. B. Mhatre, T. J. Manickam.

Boehm: Rolfe Vernon, B.E.(Adelaide) [*A* 1937], 22 Grenfell Street, Adelaide, South Australia; Main Road, Blackwood Park, South Australia. F. K. Milne, L. Laybourne-Smith, D. W. Berry.

Hirst: Philip Edwin Dean, B.Arch.(L'pool) [*A* 1936], Selim Building, 443 m/1, Rashid Street, Baghdad, Iraq; Alwiyah Club, Baghdad. Anthony Minoprio, Prof. Sir William Holford, Prof. L. B. Budden.

Irwin: James Campbell, O.B.E., E.D. [*A* 1950], 23 King William Street, Adelaide, South Australia; 35 Barnard Street, North Adelaide. L. Laybourne-Smith, D. W. Berry, W. H. Bagot.

Malins: Samuel Edward, A.A.Dipl. [*A* 1936], Public Works Department, Ilorin, Nigeria; 33 Blenheim Terrace, London, N.W.8. R. F. Jordan, Sir Howard Robertson, A. W. Kenyon.

Patil: Aravind Shankerrao [*A* 1947], Messrs. B. Mhatre, Patil and Co., Bombay Mutual Building, Hornby Road, Fort, Bombay, India; '38 West', Sion, Bombay 22. Prof. Claude Batley, S. H. Parelkar, G. B. Mhatre.

Prince: Dorian Herbert Stanley [*A* 1938], Government Architect's Office, Head Office, Ministry of Works, Wellington, New Zealand; 58 Tio Tio Road, Wellington, E.5. H. F. Robinson, S. T. Hennell, A. C. Townsend.

Steele: Reginald Goodman [*A* 1950], 23 King William Street, Adelaide, South Australia; 150 Walkerville Terrace, Walkerville, South Australia. L. Laybourne-Smith, D. W. Berry, W. H. Bagot.

and the following Licentiate who has passed the qualifying Examination:—

Harrison: John Lodge, Public Works Department, Bechuanaland Protectorate Government, P.O. Box 106, Mafeking, South Africa; 49 Carrington Street, Mafeking. D. A. Goldfinch, R. F. R. Day and applying for nomination by the Council under Bye-law 3(*d*).

AS ASSOCIATES (17)

Brown: Bryan Gordon (Final), P.O. Box 137, c/o P. W. D. Lusaka, Northern Rhodesia. A. L. Spencer, Clifford Duke, Z. Sirotkin.

Burrows: William Irving, B.Arch.(Sydney) (Passed a qualifying Exam. approved by the R.A.I.A.), 'Cherryburn', Rosedale Road, St. Ives, N.S.W., Australia. Prof. H. I. Ashworth, Prof. Denis Winston, E. L. Thompson.

Clarke: Walter George, B.Arch.(Sydney) (Passed a qualifying Exam. approved by the R.A.I.A.), 110A Carrington Road, Randwick, N.S.W., Australia. Prof. H. I. Ashworth, E. L. Thompson, Prof. F. E. Towndrow.

Cluff: Alfred William George (Final), Apartment 4, 64 Leacrest Road, Leaside, Toronto, Ontario, Canada. Applying for nomination by the Council under Bye-law 3(*d*).

Crawford: Ralph Herbert (Final), c/o P.O. Box 1256, Rangoon, Burma. Raglan Squire and applying for nomination by the Council under Bye-law 3(*d*).

Dunn: David Victor (Passed a qualifying Exam. approved by the R.A.I.A.), Messrs. Stephenson and Turner, 374 Little Collins Street, Melbourne, C.1, Australia. Sir Arthur Stephenson, Mrs. Ellison Harvie, W. P. R. Godfrey.

Gobhai: Zal Navroji (Final), Churchgate House, Veer Nariman Road, Fort, Bombay, India. H. N. Dallas, G. B. Mhatre, N. B. Shroff.

Harrison: John Gorton Hunter, B.Arch.(Auck., N.Z.) (Passed a qualifying Exam. approved by the N.Z.I.A.), 294 Lake Road, Takapuna, Auckland, N.2, New Zealand. Prof. C. R. Knight, Prof. A. C. Light, W. H. Gummer.

Karwe: Narayan Ramkrishna (Final), Assistant Architect Development Board, Kanpur (U.P.), India. Prof. S. S. Reuben, S. H. Parelkar, H. N. Dallas.

Kshirsagar: Bhalchandra Damodar (Final), c/o Chief Engineer, Eastern Command, Lucknow (U.P.), India. Prof. S. S. Reuben, S. H. Parelkar, G. B. Mhatre.

Mistry: Chapsey Rajshi (Final), 19 Ansari Road, Bombay, 24, India. G. B. Mhatre, S. H. Parelkar, H. N. Dallas.

Morgan: Derek Lawrence Duncan, A.A.Dipl. (Arch. Assoc.(London): Sch. of Arch.), c/o National Bank of India, Delamere Avenue Branch, Nairobi, Kenya. J. M. Scott and applying for nomination by the Council under Bye-law 3(*d*).

Ng: Chee Sen, B.Arch.(Melbourne) (Passed a qualifying Exam. approved by the R.A.I.A.), c/o Singapore Improvement Trust, Architecture Department, Upper Pickering Street, Singapore. Harry Winbush, R. S. Demaine, Prof. B. B. Lewis.

Ovalekar: Krishnarao Yeshwantrao (Final), 314A Choubal Lane, V. P. Road, Bombay, 4, India. S. H. Parelkar, G. B. Mhatre, H. N. Dallas.

Smart: Reginald Keith, A.S.T.C.(Arch.) (Passed a qualifying Exam. approved by the R.A.I.A.), c/o P. W. D., Singapore, Malaya. K. A. Brundle, W. I. Watson and applying for nomination by the Council under Bye-law 3(*d*).

Thorp: Frank (Passed a qualifying Exam. approved by the R.A.I.A.), c/o Messrs. Peddle, Thorp and Walker, 341 George Street, Sydney, N.S.W., Australia. P. J. Gordon, J. C. Fowell, W. R. Richardson.

Warren: Frederic Capel, A.P.T.C. (Passed a qualifying Exam. approved by the R.A.I.A.), 1 Mount Street, Perth, Western Australia. R. Summerhayes, A. J. Hobbs, W. T. Leighton.

AS LICENTIATE (1)

Asarpota: Dhamanmal Mulchand, Ellis Bridge, Ahmedabad 6, India. J. R. Anderson, Prof. Claude Batley, B. E. Doctor.

Notes and Notices

NOTICES

Sixth General Meeting, Tuesday 10 April 1956 at 6 p.m. The Sixth General Meeting of the Session 1955–56 will be held on Tuesday 10 April 1956 at 6 p.m. for the following purposes:—

To read the Minutes of the Fifth General Meeting held on 6 March 1956.

To present the Royal Gold Medal for 1956 to Dr. Walter Gropius (Hon. Corresponding Member, U.S.A.).

(Light refreshments will be provided before the meeting.)

Special General Meeting Tuesday 17 April 1956 at 6 p.m. Notice is hereby given that a Special General Meeting of the Royal Institute of British Architects will be held on Tuesday 17 April 1956 at 6 p.m., for the purpose of considering the Council's recommendation for the revision of Bye-law 43. The purpose of the revision is to enable the Council to invest a proportion of both ordinary and trust funds in securities other than those customarily permitted by the High Court under the general heading of trustee securities. The object of this revision is to make possible some offset against the declining capital value of fixed interest securities by holding a proportion of equities. It is proposed that the whole of the existing Bye-law 43 be deleted and the following text substituted:—

'43. The Council shall, unless otherwise directed by any deed or trust, have power to invest any entrance fees, surplus income, funds, donations or endowments:—

(*a*) In or upon any investments authorised by Section 1 of the Trustee Act 1925 but without the limitations imposed by the proviso in subsection (1) of Section 2 of the said Act, or in or upon any other investments for the time being authorised by law for the investment of trust funds; or

(*b*) In or upon any of the stocks, funds or securities of any dominion, commonwealth, union dependency or colony forming part of the British Commonwealth of Nations, or any province or state having a separate local legislature and forming part thereof respectively; or

(*c*) In or upon any of the stocks, bonds, mortgages or securities of any municipality, county or district council or local or public authority or board in the United Kingdom, or any such dominion, commonwealth, union, dependency, colony, province or state as aforesaid authorised under any general or special Act of the United Kingdom Parliament or the legislature concerned to issue the same; or

(*d*) In or upon any stocks, shares, bonds, mortgages, or securities the capital whereof or a minimum rate of dividend or interest whereon is guaranteed by the United Kingdom Government, or by the Government of any such dominion, commonwealth, union, dependency, colony, province or state as aforesaid; or

(*e*) In or upon the bonds, debentures, debenture stock, mortgages, obligations or securities or the guaranteed or preference or ordinary stock or shares or ordinary preferred or deferred or other stock or shares of any company incorporated under any general Act of the United Kingdom Parliament being stock or shares which are at the time of making the investment quoted on the London Stock Exchange. Provided always that no investment shall be made in any ordinary stocks or shares unless the Company shall have an issued share capital of not less than £1,000,000 and shall have no uncalled capital outstanding and shall have paid dividends thereon at the rate of at least 5 per cent per annum for at least four years prior to the date of the investment and that the total amount at any time standing invested in ordinary stocks and shares as shown by the books of the Royal Institute shall not exceed 33⅓ per cent of the total amount at such time standing invested in any of the investments hereby authorised as appearing by such books. For the purpose of valuing the ordinary stocks and shares held by the Royal Institute the minimum price to be taken for each security shall be the cost price thereof to the Royal Institute; or

(*f*) In the purchase of freehold ground rents or freehold or leasehold land, messuages, tenements and hereditaments within the United Kingdom, provided that as regards leaseholds, the term thereof shall have at least sixty years to run; or

(*g*) Upon the security of freehold property, freehold ground rents, land charges or rent charges, by way of first mortgage, up to the limit of two-thirds of the value. In order to comply with the provisions of the Scientific Societies Act 1843, it is declared that the Council may not make any dividend, gift, division or bonus in money unto or between any of the members of the Royal Institute.'

The following resolution will be proposed:—

Resolution

'That subject to the approval thereof by the Lords of Her Majesty's Most Honourable Privy Council, the amendment to Bye-law 43 as set forth in the notice calling this meeting be made and adopted by the Royal Institute.'

If this resolution is duly carried, a further Special General Meeting will be held on Tuesday 1 May at 6 p.m., immediately before the Annual General Meeting, for the purpose of confirming that resolution, in accordance with the provisions of Clause 33 of the Supplemental Charter of 1887.

Science Lecture, Tuesday 17 April 1956. There will be a lecture on Tuesday 17 April 1956, immediately following the Special General Meeting referred to above when Mr. D. L. Medd [*A*] and Mr. H. L. Gloag [*A*] will read a paper on 'Colour in Buildings'.

(Light refreshments will be provided before the lecture.)

British Architects' Conference, Norwich, 30 May–2 June 1956. A cordial invitation is extended to all members and Students of the R.I.B.A., the Architectural Association and the Allied Societies to attend the Conference to be held at Norwich from 30 May to 2 June. Full details of the programme and the application form were enclosed with the February issue of the JOURNAL. Application forms should be completed and sent to the Secretary R.I.B.A. as soon as possible but in any case *not later than* 11 *May*.

Members are again reminded that hotel reservations should be made before 31 March, as after this date the hotels cannot undertake to keep rooms unless definitely booked.

Some details of travel facilities will be found on p. 214.

Classes of Retired Members. Under the provisions of Bye-law 15 applications may be received from those members who are eligible for transfer to the class of 'Retired Fellows', 'Retired Associates' or 'Retired Licentiates'.

The Bye-law is as follows: 'Any Fellow, Associate or Licentiate who has reached the age of 55 and has retired from practice may, subject to the approval of the Council, be transferred without election to the class of "Retired Fellows", "Retired Associates", or "Retired Licentiates", as the case may be, but in such case his interest in, or claim against the property of, the Royal Institute shall cease.

'The amount of the annual subscription payable by such "Retired Fellow", "Retired Associate" or "Retired Licentiate" shall be one guinea, or such amount as may be determined by resolution of the Council, excepting in the case of those who have paid subscriptions as full members for 30 years, and who shall be exempt from further payment. A "Retired Fellow", "Retired Associate" or "Retired Licentiate" shall have the right to use the affix of his class with the word "Retired" after it, shall be entitled to receive the JOURNAL and Kalendar, shall be entitled to the use of the Library, and shall have the right to attend General Meetings, but shall not be entitled to vote. A "Retired Fellow", "Retired Associate" or "Retired Licentiate" shall not engage in any avocation which in the opinion of the Council is inconsistent with that of architecture. Nothing contained in this Bye-law shall affect the rights of persons who at the date of the passing of this Bye-law are members of the classes of "Retired Fellows" and "Retired Members of the Society of Architects".'

Associates and the Fellowship. Associates who are eligible and desirous of transferring to the Fellowship are reminded that as from 1 January 1956 all candidates for the Fellowship will be required to submit to the Fellowship Examiners drawings and photographs or examples of work. Candidates may also be required to attend for an interview, which may however be dispensed with at the discretion of the Fellowship Examiners. The necessary nomination forms may be obtained from the Secretary, R.I.B.A.

Licentiates and the Fellowship. By a resolution of the Council passed on 4 April 1938 all candidates whose work is approved are required to sit for the Examination, which is the design portion of the Special Final Examination, and no candidates will be exempted from the Examination.

Note.—The above resolution does not affect Licentiates of over 60 years of age applying under Section IV, Clause 4 (*c*) (ii) of the Supplemental Charter of 1925.

Members and Professional Affixes. The Council's attention has been called more than once to the practice among some members of adding a string of letters of doubtful value to the affix indicating membership of the Royal Institute on their letter paper.

This is a matter in which the Council obviously cannot dictate to members, and must trust to their good sense. It should be obvious, however, that the affix of a chartered body of high standing is weakened in effect by the addition to it of a string of other mysterious designations some of which probably indicate no more than the payment of an annual subscription.

Cessation of Membership. Under the provisions of Bye-law 21, the following has ceased to be a member of the Royal Institute: *as Associate:* Eric Vernon Miller.

COMPETITIONS

Manhattan Redevelopment: International Competition. The publishers of *U.S.A. Tomorrow* invite architects, city planners, engineers and all others identified with these or allied professions to submit schemes for the redevelopment of the mid-town area of Manhattan. *There is no undertaking that any award-winning entry will be used.*

Assessors: Mr. Charles Abrams, Professor Percival Goodman, Mr. Jose Luis Sert, Mr. William W. Wurster, Mr. Maurice E. H. Rotival.

Premiums: $5,000, $2,500, $1,500, $1,000.

Last day for submitting schemes: 1 June 1956.

Conditions may be obtained on application to: 'U.S.A. Tomorrow', Manhattan Redevelopment Competition, 210 Fifth Avenue, New York 10, N.Y., U.S.A.

Dwellings for Old People, East Horsley, Surrey. The Architects' Benevolent Society Homes Trust invite architects in Great Britain, Northern Ireland or the Republic of Ireland to submit in competition designs for 20 new dwellings for old people and Warden's accommodation at East Horsley, Surrey.

Assessors: Mr. H. S. Goodhart-Rendel, C.B.E. [*F*], Mr. Arthur W. Kenyon, C.B.E., M.T.P.I. [*F*], Mr. G. Grenfell Baines, A.M.T.P.I. [*A*].

Premiums: £100, £75.

Last day for submitting designs: 6 April 1956.

No questions will be answered.

Conditions may be obtained on application to: The Secretary, Architects' Benevolent Society, 66 Portland Place, London, W.1.

Deposit: £1 1*s*. 0*d*.

City and Royal Burgh of Perth: Competition for the Lay-out of Buildings, etc. The Town Council of Perth invite architects *practising in Scotland* to submit designs in competition for the lay-out of buildings, roads, parking-spaces, etc., and for shops, offices and houses in a central area of the town.

Assessor: Mr. Robert J. Naismith, M.T.P.I., F.R.I.A.S. [*A*].

Premiums: £450, £375, £250.

Last day for submitting designs: 30 April 1956.

Conditions may be obtained on application to the Town Clerk, City Chambers, Perth.

Deposit: £2.

New National Opera House at Benelong Point, Sydney, Australia: International Competition. The Government of the State of New South Wales invite architects who are members of their respective architectural institutes in any country in the world to submit designs in competition for a proposed National Opera House, to be erected on Benelong Point, Sydney, Australia.

Assessors: Professor H. I. Ashworth, M.A.(Arch.), F.R.A.I.A. [*F*], Sydney; Mr. Cobden Parkes, F.R.A.I.A. [*F*], Sydney; Dr. J. L. Martin, M.A. [*F*], London: Mr. Eero Saarinen, A.I.A., Michigan, U.S.A.

Premiums: £A5,000, £A2,000, £A1,000.

Last day for despatching designs: 3 December 1956.

Last day for questions: 12 noon, 15 May 1956.

Every intending competitor was required to register his name and address in writing with the Secretary of the Opera House Committee not later than 15 *March* 1956.

Conditions may be obtained on application to the Secretary of the Opera House Committee, c/o Department of Local Government, Bridge and Philip Streets, Sydney, Australia.

Deposit: £A10.

International Competition of Ideas Regarding the Surroundings of Cologne Cathedral. The City of Cologne invites planners to submit in competition schemes for the redevelopment of the area surrounding Cologne Cathedral.

Assessors: Herr Kelter, Cologne; Herr Riphahn, Cologne; Professor Hillebrecht, Hanover; Herr Steiner, Zürich; Professor Weyres, Cologne; Professor Baader, Bonn; Herr Pecks, Cologne; Professor Leibbrand, Zürich; Herr Schüssler, Cologne; Dr. Adenauer, Cologne.

Premiums: 20,000 DM, 14,000 DM, 10,000 DM, 6,000 DM.

The City of Cologne will also purchase 5 entries at 2,000 DM each.

Last day for submitting designs: 12 noon, 30 June 1956.

Conditions may be obtained on application to Städtebauamt der Stadt Köln, Stadthaus, Gürzenichstrasse.

Deposit: 100 DM.

International Competitions. The following International Competitions are at present being considered by the International Union of Architects, who are negotiating the conditions with the promoters in each case.

(*a*) Competition for the construction of the Sanctuary of the Madonna delle Lacrime in Syracuse.

Promoters: the Working Committee for the Sanctuary of the Madonna delle Lacrime.

(*b*) Competition for a monument in honour of Generalissimo Doctor Raphael Leonidas Trujillo Molina in the Dominican Republic.

Promoters: Junta Ejecutivo pro Celebracion del 25 Aniversario de la Era de Trujillo.

(*c*) Competition for a monument in New Delhi to commemorate the 2,500th anniversary of Buddha's Enlightenment.

Promoted by the Government of India.

In each case the Secretariat of the I.U.A. have examined the published conditions of the Competitions and found them to be generally unsatisfactory and not in accordance with the standard regulations for International Competitions approved by UNESCO (R.I.B.A. Kalendar, page 812), on the advice of the International Union of Architects. Member nations of the I.U.A. have accordingly been warned not to participate, but negotiations are taking place between the I.U.A. and the promoters with a view to bringing the published conditions into conformity with the standard regulations and a further note will be published as soon as the conditions are reported by the I.U.A. to be satisfactory.

An International Competition for a preliminary project for a Museum in Aleppo, Syria, has now been approved by the I.U.A.

Particulars can be obtained from the Syrian Embassy, 19 Kensington Palace Gardens, London, W.8. The closing date for dispatch of entries is 24 April.

COMPETITION RESULTS

New Legislative Council Building, Uganda, East Africa

1. Messrs. Edward D. Mills and Partners [*F*/*AA*].

2. Messrs. Moross and Graff [*AA*].

3. Mr. Harry Gibberd [*A*]; Messrs. L. Wright and H. Noak [*AA*].

Highly commended: Messrs. Hutchinson, Murta and Hall [*AA*].

Commended: Messrs. Reynolds, Tomlin and Dexter [*L*/*A*]; Mr. Alex Scott [*A*].

New Offices, Enniskillen

1. Mr. Harry Gibberd [*A*].
2. Mr. T. B. Fenton [*A*] and Mr. D. MacLean [*A*].

ALLIED SOCIETIES

Changes of Officers and Addresses

Hampshire and Isle of Wight Architectural Association, Western Chapter. Honorary Secretary, H. Benson Ansell [*A*], 1A Warren Edge Road, Southbourne, Bournemouth.

Bristol and Somerset Society of Architects. 'Any Questions' Programme. The Bristol and Somerset Society of Architects held a most successful 'Any Questions' programme on the subject of 'Designing our Homes' in the galleries of the Royal West of England Academy on Wednesday 8 February. Messrs. S. Singer, R. Towning Hill and F. R. Huggins spoke on various aspects of the design of high flats and of houses, and many questions were directed at the panel from an audience of 300, including representatives of many cultural, professional and commercial bodies and students from grammar and public schools.

Gloucestershire Architectural Association. Annual Ball. The Gloucestershire Architectural Association held their annual ball at the Queen's Hotel, Cheltenham, on Friday 20 January. About 200 people attended. Among the guests were Mr. C. H. Aslin, C.B.E., President R.I.B.A., and Mrs. Aslin, Mr. T. W. Snailum [*F*], President of the Bristol and Somerset Society of Architects, and local representatives of the building industry.

Mr. R. F. Fairhurst, A.M.T.P.I. [*A*], President of the Gloucestershire Architectural Association, welcomed Mr. and Mrs. Aslin. Mr. Aslin, replying, said he was glad to see that Cheltenham had managed to retain its character to a remarkable degree. Nevertheless some of the housing on its outskirts might well have been that of North London suburbs. He appealed to architects, builders and everyone interested in Cheltenham's future to protect the gracious character of this delightful town.

Northern Architectural Association. Annual Dinner. The annual dinner of the Northern Architectural Association was held on Friday 17 February at the Royal Station Hotel, Newcastle upon Tyne. Professor W. B. Edwards, M.T.P.I. [*F*], President of the Association, was in the chair, and among the guests were Mr. F. C. Saxon, O.B.E., M.C., Vice-President R.I.B.A., and Mr. C. D. Spragg, C.B.E., Secretary R.I.B.A.; the Lord Bishop of Newcastle, the Rt. Rev. Noel B. Hudson, D.D., D.S.O., M.C.; the Lord Mayor of Newcastle upon Tyne, Alderman H. Leach, J.P.; and Professor D. T. Jack, C.B.E., J.P., David Dale Professor of Economics at the University of Durham.

Professor Edwards proposed the toast of 'The Municipal Authorities of our Province' and the Lord Mayor replied. Professor Jack proposed the toast of 'The R.I.B.A. and its Allied Societies' and Mr. Saxon replied. Mr. Saxon said that the training given at the Newcastle upon Tyne School of Architecture, which he had visited previous to the dinner, was excellent, and that the students were not only catering for present requirements but were looking ahead, grasping the ideas that would be

needed in the atomic age. The toast of the guests was proposed by Mr. F. W. Harvey [*F*], Vice-President of the Northern Architectural Association, and replied to by the Lord Bishop and Mr. Spragg.

South Eastern Society of Architects. Maidstone Chapter. Inaugural Dinner. The inaugural dinner of the new Maidstone Chapter of the South Eastern Society of Architects was held at the Royal Star Hotel, Maidstone, on 14 February. The guests included Mr. C. H. Aslin, C.B.E., President R.I.B.A., and Mrs. Aslin; the Mayor and Mayoress of Maidstone, Councillor Brigadier Harold Fletcher, O.B.E., T.D., J.P., and Mrs. Irene Gibbon; Canon and Mrs. Bennett; Mr. Graham Crump, J.P. [*F*], President of the South Eastern Society of Architects, and Mrs. Crump; and Councillors F. Leslie Wallis, O.B.E., J.P., President of the Institute of Builders, and Mrs. Wallis. In all, the gathering numbered 157.

The Chairman of the new Chapter, Mr. H. J. Dicketts [*L*], was unfortunately unable to be present owing to illness and the chair was taken by Mr. G. E. Soulsby [*A*], Vice-Chairman, who received the guests with the President and Mrs. Aslin. Mr. Soulsby proposed the toast of 'The R.I.B.A. and Allied Societies' and in his reply the President R.I.B.A. wished the new Chapter success and thanked the local Societies for the work they do. Sir Alfred Bossom, Bart., LL.D., M.P., J.P. [*F*], proposed the toast of 'The Mayor and Corporation of Maidstone' and in his reply the Mayor said the town was proud of the monuments it possessed, the work of architects in past years. Finally Mr. Ashley Smith [*F*], County Architect of Kent, proposed the toast of 'Our Guests.' He mentioned the good work being done by Councillor Leslie Wallis, the technical Press and others present to make known the work of architects and in furthering education in the building industry. Mr. Gontran Goulden, T.D. [*A*], replied.

A madrigal group, conducted by Mr. Mervyn Bruxner, M.A., County Music Adviser for Kent, sang a selection of madrigals.

GENERAL NOTES

British Architects' Conference, Norwich. Travel Facilities. British Railways will (without charge) reserve accommodation for members of the Conference on any of the undermentioned trains from Liverpool Street if they know in advance the number of members travelling. Members wishing to avail themselves of this facility must send the following information to the Secretary, R.I.B.A., not later than 11 May:—

(*a*) Time of train on which they will travel.
(*b*) Number of persons in the members' party.
(*c*) First or third class.

Members must obtain their own tickets for the journey in the normal way.

Trains from Liverpool Street to Norwich on Wednesday 30 *May*

(all have refreshment cars)

	a.m.	a.m.	p.m.	p.m.
Liverpool St. ..	9.30	10.30	12.30	3.30
Colchester ..	—	11.47	1.55	—
Ipswich	10.49	12.24	2.24	4.46
Norwich (Thorpe)	11.40	1.26	3.15	5.30

Trinidad and Tobago Society of Architects. At the Society's first meeting this year on 31 January Mr. Anthony Lewis [*F*] was elected Chairman for the ensuing year, and Mr. J. R. Firth [*A*] was re-elected Secretary. During December a very successful first annual dinner was held, in the course of which Mr. A. Dadley Moore [*L*], proposing a toast to the guests, warned all present that the qualified architects of Trinidad and Tobago would in due course press for registration on the lines of the system in force in the United Kingdom.

Notes from the Minutes of the Council

MEETING HELD 7 FEBRUARY 1956

1. Appointments

(A) *R.I.B.A. Representatives on the Architects' Registration Council for* 1956–1957. 28 *representatives on the Architects' Registration Council.* Harold Anderson [*F*], D. H. Beaty-Pownall [*F*], Ronald Bradbury [*F*], J. B. Brandt [*F*], J. T. Castle [*A*], L. A. Chackett [*F*], T. S. Cordiner [*F*], F. F. Curtis [*F*], R. E. Enthoven [*F*], R. O. Foster [*F*], S. Vincent Goodman [*F*], J. K. Hicks [*F*], R. J. Hurst [*F*], Howard L. Kelly [*F*], Cecil Kennard [*F*], H. Martin Lidbetter [*F*], Howard V. Lobb [*F*], E. D. Lyons [*A*], S. W. Milburn [*F*], E. D. Mills [*F*], T. E. North [*F*], J. T. W. Peat [*F*], Denis Poulton [*F*], F. L. Preston [*F*], A. L. Roberts [*F*], W. A. Rutter [*F*], R. H. Uren [*F*], A. Neville Ward [*A*].

(B) *R.I.B.A. Representatives on the Admission Committee, A.R.C.U.K.* L. A. Chackett [*F*], H. Martin Lidbetter [*F*], E. D. Lyons [*A*], J. T. W. Peat [*F*].

(C) *Central Council of Civic Societies: R.I.B.A. Representative.* S. Rowland Pierce [*F*] in place of A. L. Roberts [*F*].

(D) *C.P.R.E.: R.I.B.A. Representative.* R. T. Kennedy [*A*] in place of C. W. C. Needham [*F*].

(E) *Central Panels Committee.* C. E. Culpin [*F*], Peter B. Dunham [*F*] and R. T. Kennedy [*A*] in place of John L. Denman [*F*], C. W. C. Needham [*F*] and A. L. Roberts [*F*]. (Note: The other two R.I.B.A. Representatives, A. W. Kenyon [*F*] and Stanley C. Ramsey [*F*], remain in office.)

(F) *International Federation for Housing and Town Planning.* Anthony Minoprio [*F*] and J. Lewis Womersley [*F*] in place of Edward Armstrong [*F*] and W. Dobson Chapman [*L*]. (Note: The other three R.I.B.A. Representatives, Sir Patrick Abercrombie [*F*], Sir Lancelot Keay [*F*] and A. W. Kenyon [*F*], remain in office.)

(G) *Public Works and Municipal Services Congress: R.I.B.A. Representative on Council.* Leonard C. Howitt [*F*] in place of S. H. Loweth [*F*].

(H) *R.I.B.A. Representatives on B.S.I. Committees.* On the recommendation of the British Standards Co-ordinating Committee through the Science Committee, it was agreed as a matter of urgency to make the following appointments: *B*/87—*Corrugated Translucent Sheets,* A. P. Cooksey [*A*]—new appointment. *B*/29—*Co-ordination of Sequence of Trade Headings in Specification.* D. W. Aldred [*F*]—in place of E. H. Sadler [*A*] who had resigned.

2. Direct Election to the Fellowship. On the recommendation of the Council of the Royal Incorporation of Architects in Scotland Mr. George Reid, F.R.I.A.S., was elected to the Fellowship under the provisions of the Supplemental Charter of 1925 Section IV Clause 4.

3. Completion of Premises Fund. The Hon. Treasurer reported that a donation of £3 to the Completion of Premises Fund had been received from Mr. Harry Barrett [*A*] (U.S.A.). The Council expressed their appreciation.

4. Editor: R.I.B.A. Journal. The Council received with regret the resignation of Mr. Eric L. Bird [*A*] from the appointment of Editor, R.I.B.A. JOURNAL. In his place it was agreed to appoint Mr. Noel Musgrave, at present editor of THE ARCHITECT AND BUILDING NEWS.

5. Grants and Subscriptions. The Council considered draft estimates of income and expenditure for the year 1956 and in connection therewith the following list of grants and subscriptions was approved: British School at Rome £750, Architects' Benevolent Society £150, Architectural Association Lantern Slide Collection £100; Council for the Preservation of Rural England £50, British School of Archaeology at Athens £50, British Standards Institution £31 10*s*., Parliamentary and Scientific Committee £26 5*s*., Students' Easter Visit to Rome £50, National Trust £25, National Smoke Abatement Society £12 12*s*., R.I.B.A. Cricket Club £10 10*s*., R.I.B.A. Library Group £10, Council for the Preservation of Rural Wales £10 10*s*., Association for the Preservation of Rural Scotland £10 10*s*., Ulster Society for the Preservation of the Countryside £5 5*s*., National Trust for Scotland £5 5*s*., National Art Collections Fund £3 3*s*., International Federation for Housing and Town Planning £5, British School at Rome, Faculty of Archaeology £3 3*s*.

6. R.I.B.A. Form of Contract. (A) *Fluctuations Clause.* In view of the recent move by a number of building materials' manufacturers to stabilise prices for a stated period it was agreed to ask the Joint Consultative Committee of Architects, Quantity Surveyors & Builders to give further consideration to the possibility of abolishing the Fluctuations Clause in respect of materials in the R.I.B.A. Form of Contract. (B) *Clause* 19. On the recommendation of the Joint Contracts Tribunal, amendments to Clause 19 of the R.I.B.A. Form of Contract were approved.

7. Regional Productivity Conference for London. The Council received a report on the conference attended by Mr. Howard V. Lobb [*F*] and Mr. E. D. Mills [*F*], convened by the British Productivity Council to discuss a proposal to set up a permanent Building Industry Productivity Conference for the London area. The meeting had recommended that such a Conference be set up and it was agreed to approve of the R.I.B.A. being represented on the permanent Conference. Mr. Lobb and Mr. Mills were accordingly appointed as the R.I.B.A. representatives.

8. Part-time Lecturers on behalf of Local Education Authorities. The Council accepted an invitation from the Joint Committee of the Law Society and General Council of the Bar to join in discussion with the associations representing local education authorities with a view to reaching agreement on a minimum rate of remuneration for part-time lectures delivered under the auspices of local education authorities.

9. Housing Subsidies Bill. On the recommendation of the Town and Country Planning and Housing Committee it was agreed to make representations urgently to the Ministry of Housing and Local Government on two points

in connection with the Housing Subsidies Bill before Parliament. It was felt that the subsidy scale should be related to current building costs rather than show a financial bias in favour of one type of development against another. In this respect the view was taken that the present weighting against three-storey development would have a serious limiting effect on architectural freedom in the design of mixed development schemes of houses and flats, especially in slum clearance areas.

Under Clause 11 (1) of the Bill, replacements to fit houses that have to be demolished along with unfit houses do not qualify for the increased slum clearance subsidy and this limitation seemed to the Council to militate against the proper planning of a comprehensive redevelopment of such areas.

10. Membership. The following members were elected: As Fellows—8; As Associates—16.

11. Students. 226 Probationers were elected as Students.

12. Applications for Reinstatement. The following applications were approved: As Fellow—Henry Edgar Gardham; As Associate—Robert Alexander Scott.

13. Resignations. The following resignations were accepted with regret: David Harold Bishop [*A*], Mrs. Mary Clemens de Lisle [*A*], Mrs. Beatrice Agnes Foyle [*A*], James Leslie King [*A*], William Paterson [*A*] (Serial No. 2487), Frederick James Cornford [*L*], E. de Wilde Holding [*L*], John Fox Jones [*L*].

14. Applications for Transfer to Retired Members' Class under Bye-Law 15. The following applications were approved: As Retired Fellows—George Pemberton Allen, Ernest Marston Powers; As Retired Licentiates—Leslie Dickinson, Edgar Wallis Long, Henry Cecil Newman, Arthur Edward Sheppard, Gilbert Douglas Wiles, William Francis Wills.

15. Obituary. The Secretary reported with regret the death of the following members: Douglas Adshead Grant [*F*], Launcelot Hugh Ross, M.C. [*F*], William Scott [*F*], Robert Bennett [*Retd. F*], James Gardner Gamble [*Retd. F*], Henry Charles Portsmouth [*Retd. F*], Donald Whatmore Bell [*A*], Mrs. Millicent Anne Brimicombe [*A*], John Campbell, D.C.M., M.M. [*A*], Leslie William Hall [*A*], Clement John Picton [*A*], James Ewing [*Retd. A*], Gerald Joseph Bolland [*L*], Captain John Evans, M.C. [*L*], Percy Herbert Grundy [*L*], Leonard Pierpoint [*L*], Owain Tudor Thomas [*L*], Herbert Steel-Ogden [*Retd. L*], Eric John Stanford [*Student*].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

Obituaries

Amos Sunderland [*Retd. F*] died on 20 June 1955, aged 76.

Mr. Sunderland was in the Architect's Department of Leeds School Board and later Leeds Education Committee from 1896 to 1904, then became Surveyor to Croydon Education Committee and later Architect and Surveyor. Mr. Sunderland retired and went to live in Cornwall in 1943.

Charles William Long [*F*] died on 29 July 1955, aged 67.

Mr. Long studied at Caius College, Cambridge, and began practice in 1913. He practised in London and Cambridge and was for a time in partnership with Mr. T. D. Atkinson [*F*]. He was Surveyor to the Diocese of Ely for some years and carried out reconstruction work on the Lady Chapel, Ely Cathedral, and also to the Gate of Honour, Caius College. He was also responsible for Victoria House, Bloomsbury, and for various war memorials in the eastern counties. He was an exhibitor at the Royal Academy and in Paris and Edinburgh.

Edward Thurlow Leeds, M.A.(Oxon.), F.S.A. [*Hon. A*], died on 17 August 1955, aged 78. He was Keeper of the Ashmolean Museum, Oxford, and an authority on Anglo-Saxon archaeology.

Mr. Leeds originally read Classics at Cambridge, then went into the Federated Malay Service as a cadet and spent some time in China, learning Chinese. A breakdown in health however compelled him to return to England. After some years he went to the Ashmolean as assistant keeper, and from then on turned to archaeology as his life-work. His books included *The Archaeology of the Anglo-Saxon Settlements*, *Early Anglo-Saxon Art and Archaeology*, *A Corpus of Early Anglo-Saxon Square-headed Brooches*, and *Celtic Ornament in the British Isles down to A.D.* 700; he also contributed a large number of articles to the archaeological press. He was elected F.S.A. in 1910 and was a vice-president of the Society from 1929 to 1932. He was elected Honorary Associate of the R.I.B.A. in 1932 and in 1946 was awarded the Gold Medal of the Society of Antiquaries.

Melville Crum Brown [*A*] died in August 1955, aged only 31. He was elected Associate in 1950.

Mr. Brown qualified at the Glasgow School of Architecture and then held various posts as architectural assistant. He worked on the Festival of Britain Exhibitions in London and Glasgow under Mr. Basil Spence, and in August 1953 went to the Harlow Development Corporation. As a student Mr. Brown was awarded a Bellahouston travelling scholarship, had visited Sweden and become much interested in Swedish architecture and interior decoration. In January of last year he went to Sweden to work for six months in the office of Mr. Sven Ahlbom, architect, in order to have a further opportunity of studying Swedish interior design.

William Hansell Hayward, F.R.I.C.S. [*F*], died on 6 September 1955, aged 68.

Mr. Hayward served his articles with a firm in Tunbridge Wells but practised in London, from 1919 onwards. He was in partnership from 1937 to 1939 with Mr. M. M. F. Wingate [*F*], who died on 5 October last. In 1952 his son, Mr. J. H. Hayward [*A*], joined him, and he now carries on the practice at 231 Strand, W.C.2.

Mr. Hayward built a factory for John Fairdale Ltd. at 270 Kingsland Road, London, E.8, but his work consisted mostly of flats: Embassy House, West End Lane; Warwick Lodge, Shoot Up Hill, Cricklewood; Fir Lodge, South Woodford; and Dorchester Court, Colney Hatch Lane, N.10.

Mr. Hayward was keenly interested in Freemasonry and was Past Master of a Surrey Lodge.

Michael Melvill Fenton Wingate [*F*] died on 5 October 1955, aged only 47.

Mr. Wingate was educated at Westminster School and trained at the Northern Polytechnic School of Architecture. He began personal practice in partnership with Mr. W. H. Hayward [*F*] in 1937, and remained in partnership until 1939. He built a factory for Nathan Cohen, Ripple Way, Barking, Essex; Embassy House, West End Lane, and Fir Lodge, South Woodford, with Mr. Hayward; and a number of houses.

Edwin H. Earp [*L*] died on 13 November 1955, aged 73.

Mr. Earp, who was the senior partner in the firm of Edwin H. Earp & Badger, had practised in Stratford-upon-Avon for some twenty-five years. For many years he was architect to the Shipston-on-Stour Rural District Council, and his design for Council houses at Little Compton was selected for reproduction in the 1949 edition of *The Housing Manual*. For his housing scheme at Barton-on-the-Heath he was awarded a medal by the Ministry of Housing and Local Government in 1954.

As is typical in a country practice, Mr. Earp's architectural interests covered a very wide range, and he was particularly fond of his work in the Cotswold stone country.

A very keen Rotarian, he was a past-President of the Stratford-upon-Avon club and a regular delegate to national and district conferences.

Locally Mr. Earp was a prominent Freemason, a Past Master and Trustee of The David Garrick Lodge, a past provincial Grand Warden for Warwickshire, and for some years Preceptor of the lodge of instruction.

REGINALD BADGER [*A*]

James Hembrow [*Retd. F*], died on 20 October 1955, aged 73.

Mr. Hembrow was articled to James Cubitt [*F*] in 1901 and started his own practice in 1921 in partnership with A. J. Murgatroyd. He was responsible for Broadcasting House, Piccadilly, Manchester, and numerous premises for the Manchester and County Bank. He specialised in strong rooms and safe deposits.

Mr. Hembrow was a founder member of the Town Planning Institute and was a Town Planning Adviser in 1912 and a Regional Architect for the Ministry of Health in 1918. He was the author of a number of articles in the technical press on town planning, bank architecture, strong rooms and safe deposits, airports and heli-ports.

William John Jenkins [*L*] died on 4 November 1955, aged 63.

Mr. Jenkins was articled to the late S. R. Crocker [*F*] in 1909. After war service from 1915 to 1919 he was assistant to Mr. T. Alwyn Lloyd [*F*] until 1921, when he rejoined Mr. Crocker. With Mr. Crocker he worked on a number of private houses and housing estates both in Wales and England—including those at Barry, Sedgley (Staffs), Braintree and Woodford. Mr. Jenkins was a Senior Assessor with the War Damage Commission from 1942 to 1950, when he retired owing to ill health.

Samuel Reginald Maisey [*A*] died on 5 July 1955, aged 63.

Mr. Maisey studied at Sydney Technical College and at the Architectural Association, London, and practised throughout his life in Sydney, where he served his articles with Mr. Trenchard Smith. In 1919 he became a partner and the firm was known as Trenchard Smith and Maisey. The partnership's principal works embraced the town hall and soldiers' hall at Manly, Sydney, various works including three large pavilions for the Royal Agricultural Society of New South Wales, baby health centres and private houses.

Charles Roy Fowkes, A.M.T.P.I. [A] died on 16 December 1955, aged 47.

Mr. Fowkes trained at the Northern Polytechnic School of Architecture, London, and at the Central School of Arts and Crafts. His private work was not extensive, being carried out only spasmodically over the last 25 years. For a short while in the early thirties he was a lecturer at Beckenham School of Art; subsequently, after various posts as assistant, he became for a time Resident Chief Architect at the Royal Ordnance Factory, Risley, and then in 1941 transferred to the Ministry of Works. Here he was engaged on post-war research, particularly on the standardisation of housing equipment and building components. In 1946 he transferred to the Ministry of Housing and was in charge of the draughting of the *Housing Manual*. In 1948 he became Deputy Chief Architect and Surveyor in the office of the Receiver for the Metropolitan Police District.

Mr. Fowkes was the author of a number of articles in the technical press, including several sections of *Specification*, published by the Architectural Press. He was co-author with Mr. F. R. S. Yorke [F] of *Flooring Materials* (Faber and Faber, 1948) and he has also been associated with the English edition of *Garagen-und-Tankstellenbau* to be published shortly by Messrs. Leonard Hill Ltd. He was a frequent exhibitor of water colours at the Royal Academy.

Dudley Nisbett, D.S.O., M.C. [*L*], died on 14 August 1955, aged 61.

Mr. Nisbett served his articles and practised in Liverpool, beginning about 1928–1930. He carried out principally industrial and hospital work, including premises for British Insulated Cables at Prescot, factory buildings and a canteen for Automatic Telephones at Edgehill, Liverpool, and much institution building work for West Derby Union, Liverpool.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. D. Ling [*A*] has been appointed Assistant Regional Architect to the Ontario Region of the Central Mortgage and Housing Corporation, and will be glad to receive trade catalogues, etc., at 40 Eglinton Avenue, Toronto 12, Ontario, Canada.

Mr. J. A. P. Rice [*A*] has been appointed Company Architect, Vic Hanam Ltd., Langley Mill, Nottingham (Langley Mill 501).

Mr. Robert B. Thomson [*A*] is sailing for Australia on 28 March to take up a post as architect with the Architect-in-Chief, Government of South Australia. His address will be c/o Architect-in-Chief, Government Buildings, Victoria Square, Adelaide, South Australia.

PRACTICES AND PARTNERSHIPS

Mr. Cecil J. Bourne [*A*] has begun practice at Commercial End, Swaffham Bulbeck, Cambridge (Bottisham 233), where he will be pleased to receive trade catalogues.

Mr. E. Pethybridge [*A*] has begun practice under the style of **Field, Pethybridge and Partners** at Lawrence House, Breakspear Road, Ruislip, Middlesex, where he will be pleased to receive trade catalogues, etc.

Messrs. D. Harvey and A. Scott [*AA*], 2 Lynedoch Place, Glasgow, C., will be pleased to receive trade catalogues, etc., at their branch office at 13 High Street, Paisley.

Mr. Clifford Hughes [*A*] is now practising at 'The Hoo', Church Street, Willingdon, Eastbourne, and will be pleased to receive trade catalogues.

Mr. Verner O. Rees [*F*] has taken into partnership **Mr. Philip H. Laurence** [*A*] and **Mr. Alan G. Mitchell** [*A*]. The practice will be carried on under the style of **Verner Rees, Laurence and Mitchell** at 51 Queen Caroline Street, W.6.

Mr. Douglas Rowntree [*F*], London, and **Mr. Colin Rowntree** [*F*], York, have dissolved their partnership by mutual consent. Mr. Douglas Rowntree will retain the firm's name, **Fred Rowntree and Sons**, and will continue to practise from 62 George Street, Portman Square, London, W.1. Mr. Colin Rowntree has entered into partnership with **Mr. Gerald L. Thompson** [*F*] and their firm will be known as **Rowntree and Thompson** and will continue to practise from 120 The Mount, York, and 22 Park Street, Selby, and also from 62 George Street, Portman Square, London, W.1.

Mr. Peter J. W. Ware [*A*] has begun practice on his own account at 12 Eaton Crescent, Clifton, Bristol 8.

Mr. Leslie G. Wood [*A*] has taken into partnership **Mr. Arthur L. Pigg** [*A*]. The practice will continue from 17A Northumberland Square, North Shields, under the style of **Leslie G. Wood and Arthur L. Pigg.**

CHANGES OF ADDRESS

The present address of **Mr. F. Philip Brotherton** [*A*] is 1327½ Maple Avenue, Evanston, Illinois, U.S.A.

Mr. C. Gurney Burgess [*L*] has changed his address to Beech House, 2 Cardiff Road, Luton, Beds. (Luton 5685).

Stirling and Margaret Craig [*AA*] have changed their address to 30 London Road, Stevenage, Herts.

Mr. Roger C. Harrison [*A*] has changed his address to 'The Elms', White Roding, near Dunmow, Essex.

Mr. Robert B. Jackson [*A*] has now changed his address to 25 Lower Baggot Street, Dublin, Eire.

Mr. E. Percy Kendall [*L*] has now changed his address to 15A Princes Avenue, Gunnersbury Park, London, W.3, and will be pleased to receive trade catalogues, etc.

The address of **Mr. A. G. Kirkwood** [*A*] is now Public Works Dept., Architectural Branch, Douglas Buildings, Victoria, B.C., Canada.

The address of **Mr. H. W. McLean** [*A*] is now 'Brog', Clayton Avenue, Hassocks, Sussex (Hassocks 377).

Mr. John B. Shelley [*A*] has now taken up permanent residence at 'Northgate', Grosvenor Terrace, Teignmouth, Devon (Teignmouth 1117).

Messrs. Thomas and Morgan and Partners (Mr. V. D. L. Thomas and **Mr. M. C. Williams** [*AA*]) of 23 Gelliwastad Road, Pontypridd, Glam., have recently opened a branch office at No. 4 Court Road, Bridgend, Glam. (Bridgend 1207), and will be pleased to receive trade catalogues, etc. Representatives by telephone appointment.

The address of **Mr. J. W. Van der Steen** [*A*] is now Government Architect's Branch, New South Wales Dept. of Public Works, Sydney, N.S.W.

Mr. K. H. Vickers [*A*] is now practising at Halifax Chambers, 34/36 Oxford Street, Whitstable, Kent (Whitstable 2204/5). Trade catalogues, etc., will be welcome.

The address of **Mr. P. Winder** [*A*] is now Department of Works, Architects' Office, Canberra, A.C.T., Australia.

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow with medium-sized expanding practice, with contemporary outlook, seeks junior partner about 35, preferably University trained, capital or own work immaterial. Box 19, c/o Secretary, R.I.B.A.

Associate, English, 43, University trained, seeks situation with possibility of partnership in southern half of England (not London). Considerable experience of town and country practice both as chief assistant and principal. Single, car driver, capital available. Box 20, c/o Secretary, R.I.B.A.

Elderly (active) modern architect (Fellow), surveyor and timber-rot consultant, offers partnership in busy London practice after trial collaboration to young/youngish architect (and surveyor). Training in timber-rot field available. Box 21, c/o Secretary, R.I.B.A.

Well-established practice for sale, Surrey. Small busy office with extensive connections. Good opportunity for resident this area. Further particulars only in strict confidence. Box 23, c/o Secretary, R.I.B.A.

Practice, established 80 years, available in north-east Suffolk to principal with small capital. Box 24, c/o Secretary, R.I.B.A.

Fellow, at present in practice, desires to obtain an interest, or whole practice to add to interest. Preferably in south or west of England or Lake District. Box 25, c/o Secretary, R.I.B.A.

London S.W.1 firm offers salaried post with prospect of early junior partnership to suitably experienced architect. Unusual and varied work. Box 26, c/o Secretary, R.I.B.A.

WANTED AND FOR SALE

Wanted. Surveying equipment, dumpy level, etc. Please state price required. Box 22, c/o Secretary, R.I.B.A.

ACCOMMODATION

Architect has to let two offices (each about 180 sq. ft.) forming part of well-arranged suite. Telephone extension available. Gray's Inn district. Box 27, c/o Secretary, R.I.B.A.

The Royal Institute of British Architects, as a body, is not responsible for statements made or opinions expressed in the JOURNAL.

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